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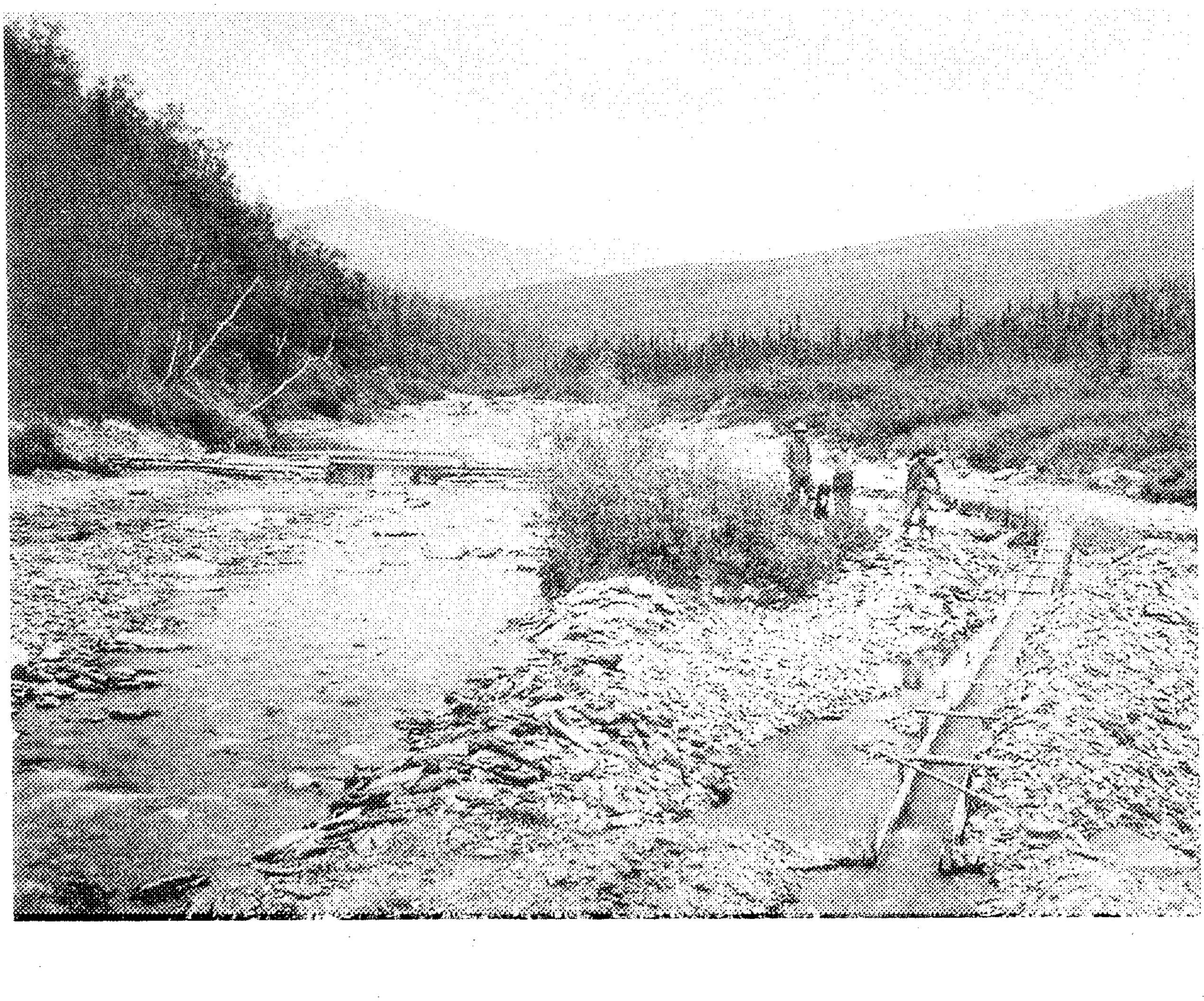
Mineral Investigations of the Koyukuk Mining District, Northern Alaska

Progress Report

Joseph M. Kurtak, Robert F. Klieforth, John M. Clark, and Earle M. Williams



Mission Statement

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Cover

Hand mining for placer gold on Myrtle Creek in 1899. Photo by F.C. Schrader, U.S. Geological Survey.

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ABSTRACT

The Bureau of Land Management Anchorage Mineral Resource Team (AMRT) is conducting a five-year mineral resource assessment of the 11.6 million acre Koyukuk mining district in northern Alaska. The district comprises the upper portion of the Koyukuk River drainage basin, the headwaters of which lie on the southern flank of the Brooks Range. The federal government manages 72% of the land within the district. District production totals approximately 286,000 ounces of placer gold and six tons of antimony ore. In 1998 there were 13 active placer mines in the district.

There are 407 documented mines, prospects, and mineral occurrences within the district. These include gold placers; gold- and antimony-bearing quartz veins; copper- and zinc-bearing massive sulfides; copper-bearing porphyries; tungsten-, copper-, and tin-bearing skarns; tin-bearing greisens; chromite; and coal. A total of 175 sites have been examined to date and 960 rock, soil, stream sediment, pan concentrate, and placer samples collected.

A portion of the study, consisting of an airborne geophysical survey, was done in cooperation with the Alaska Division of Geological and Geophysical Surveys (ADGGS). Ground magnetic and electromagnetic conductivity surveys were done by AMRT as a followup to the airborne survey. In addition ground penetrating radar surveys were conducted over known placer deposits to identify channel locations and bedrock depth.

Significant results from the first two years of this assessment include the delineation of anomalous gold values within volcanic rocks on the upper Indian River, anomalous placer gold in bench gravels above the Hammond River, gold-bearing quartz veinlets on nearby Vermont and Smith Creeks, and gold anomalies associated with skarn and massive sulfide occurrences in the Chandalar copper belt north of Bettles River.

ABBREVIATIONS

Btu/lb	British thermal unit per pound
°F	degrees Fahrenheit
oz	ounce(s)
oz/cyd	ounce(s) per cubic yard
oz/ton	ounce(s) per short ton
ppb	part(s) per billion
ppm	part(s) per million

INTRODUCTION

In 1997 the Bureau of Land Management (BLM) Anchorage Mineral Resource Team (AMRT) initiated a five-year assessment of the mineral resources of the Koyukuk Mining District. The ultimate objectives of this evaluation are: **1)** to identify the mineral resources of the area and **2)** to perform mining feasibility studies, using hypothetical mine models on mineral deposits that have potential to be economic. This study is part of the BLM's ongoing mining district evaluation program and is authorized under Section 1010 of the Alaska National Interest Lands Conservation Act (ANILCA). An airborne geophysical survey of a portion of the district was done in 1997 as a cooperative effort with the Alaska Division of Geological and Geophysical Surveys (ADGGS). This report discusses the results from the first two years of the Koyukuk study and includes information gathered in the district by the former U.S. Bureau of Mines.

Out of 56 placer-producing districts in Alaska, the Koyukuk ranks 17^{th} highest, with production totaling approximately 286,000 ounces of gold. Approximately 60% of this gold comes from creeks in the Wiseman area (Plate 1). Lode production consists of about six tons of antimony ore mined from a small deposit near Nolan Creek. In 1998 there were 1,354 active mining claims, the fourth highest among the state's 69 mining districts, and 13 active placer mines in the district.

The Koyukuk contains 407 mines[1], prospects[2], and mineral occurrences[3]. These include gold placers, gold-bearing quartz veins, copper-zinc massive sulfides, copper-bearing porphyries, tungsten-copper skarns, tin-bearing greisens, podiform chromite, and coal.

Acknowledgments

The authors are indebted to the many individuals involved in helping the Koyukuk study progress to its present status. Field assistants Darrel VandeWeg and Emily Davenport along with volunteers: Mark Johnson, Fred Harnisch, Trisha Herminghaus, Karsten Eden, and Dan Kurtak provided much-appreciated assistance while putting up with bugs, bears, and bad weather along the way. Resource Apprenticeship Program intern and high school student Johnnie Lyman was a welcome addition to the field crew and kept us focused by asking lots of questions.

Helicopter pilots Ed Bartoli and Marty Stauber did their utmost to help us accomplish our mission without compromising safety. Mechanic Lowell Berentsen kept the helicopter running smoothly and went out of his way to ensure that aircraft maintenance did not conflict with field work. The staffs of the Indian Mountain Long Range Radar Site, Bettles Lodge, and Silverado Gold Mines Inc. provided comfortable accommodations for the field crew.

The authors appreciate the cooperation and hospitality shown by the following claim owners and apologize for any that may have been left out: Bill and Lil Fichus (Crevice Creek), Mitch Fleming (Myrtle Creek), John and Ethel Hall (Linda Creek), Ralph Hamm (Porcupine Creek), Mick Manns (Birch Creek), Marie Mead (Sawyer Creek), Northern Lights Mining (Rye Creek), Heinrich Schoenke (Lake Creek), Silverado Gold Mines Inc. (Nolan Creek), Dennis Stacey (Vermont Creek), and Ted Wicken (Gold Creek).

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[1] Confirmed production over a period of several years.

[2] Development work done, but no recorded production.

[3] Mineralization exists, but there is no sign of development.

Geography and Climate

The Koyukuk mining district contains 11.6 million acres and drains the upper portion of the Koyukuk River basin and the adjoining Kanuti River (Plate 1, Figure 1). The Kanuti-Koyukuk confluence forms the southern boundary of the district. The north is bounded by the crest of the Brooks Range, the west by the Noatak and Kobuk Rivers, and the east by the Chandalar River. It has been divided into two subdistricts: the Alatna in the southwest half and the Wiseman in the northeastern half (Ransome and Kerns, 1954, p.82).

The majority of the southern portion of the district is located in the unglaciated Kanuti Flats which are low plains 400-1,000 feet in elevation, dotted by lakes, and containing little to no rock exposures. The Kanuti Flats are characterized by a *taiga* environment where black and white spruce, poplar, birch, alder, and willow are concentrated along river drainages with low sedge tussock-covered hills in between. The flats give way to the unglaciated Indian and Ray Mountains on the south with summits rising to 4,800 feet.

The northern half of the district is dominated by the rugged glaciated peaks of the Endicott Mountains which make up the Central Brooks Range (Figure 2). This includes Mt. Doonerak, which at 7,610 feet is one of the highest peaks in the range. Cirque glaciers occur locally in the higher parts of the range. The Endicott Mountains contain broad river valleys with similar vegetation as the flats, giving way to tundra-covered uplands with timberline ranging between 2,000 and 3,000 feet. In general the region south of the trunk of the Koyukuk River lies within the discontinuous permafrost zone while that to the north lies within the continuous permafrost zone (Maddren, 1913, p. 28; Ferrians, 1965; Wahrhaftig, 1965).

Three-quarters of the Koyukuk district lies north of the Arctic Circle (lat 66°33‘31" N.) and is dominated by the continental climate zone of Alaska; a zone characterized by warm summers and extremely cold winters, low precipitation, low cloudiness and low humidity (Johnson and Hartman, 1969, p. 60). The summaries shown in Table 1 are taken from seven weather stations located within or adjacent to the district. Low temperatures for these sites average 11°F and highs average 30°F. The extremes are 93°F and -82°F. This low is an unofficial North American low temperature set at Coldfoot in 1989 (Mull and Adams, 1989, p. 79). Precipitation averages 13.6 inches with an average snowfall of 85.5 inches. It is usually lightest in April and highest in August. Afternoon thunder and lightening storms with accompanying precipitation occur during summer months and fresh snow can coat the high peaks during any month of the year.

Permanent settlements within the district include three native villages: Anaktuvuk (population 308), Allakaket (population 143), and Alatna (population 32). Bettles (population 48, and labelled Evansville on most maps) is centrally located in the district and provides aircraft services and accommodation for travelers. Wiseman (population 19) and Coldfoot (population 17), established to support nearby placer mines, are accessible from the North Slope Haul Road (Dalton Highway) which is the only road access to the district. Wildlife inhabiting the area include grizzly and black bear, caribou, moose, Dall sheep, wolves, and red fox.

Land Status

Land area within the Koyukuk mining district totals 11.6 million acres, 72% of which are under federal management (Plate 1). BLM lands are concentrated along the pipeline corridor in the eastern portion of the district. These are generally open to mineral entry except those portions lying directly adjacent to the

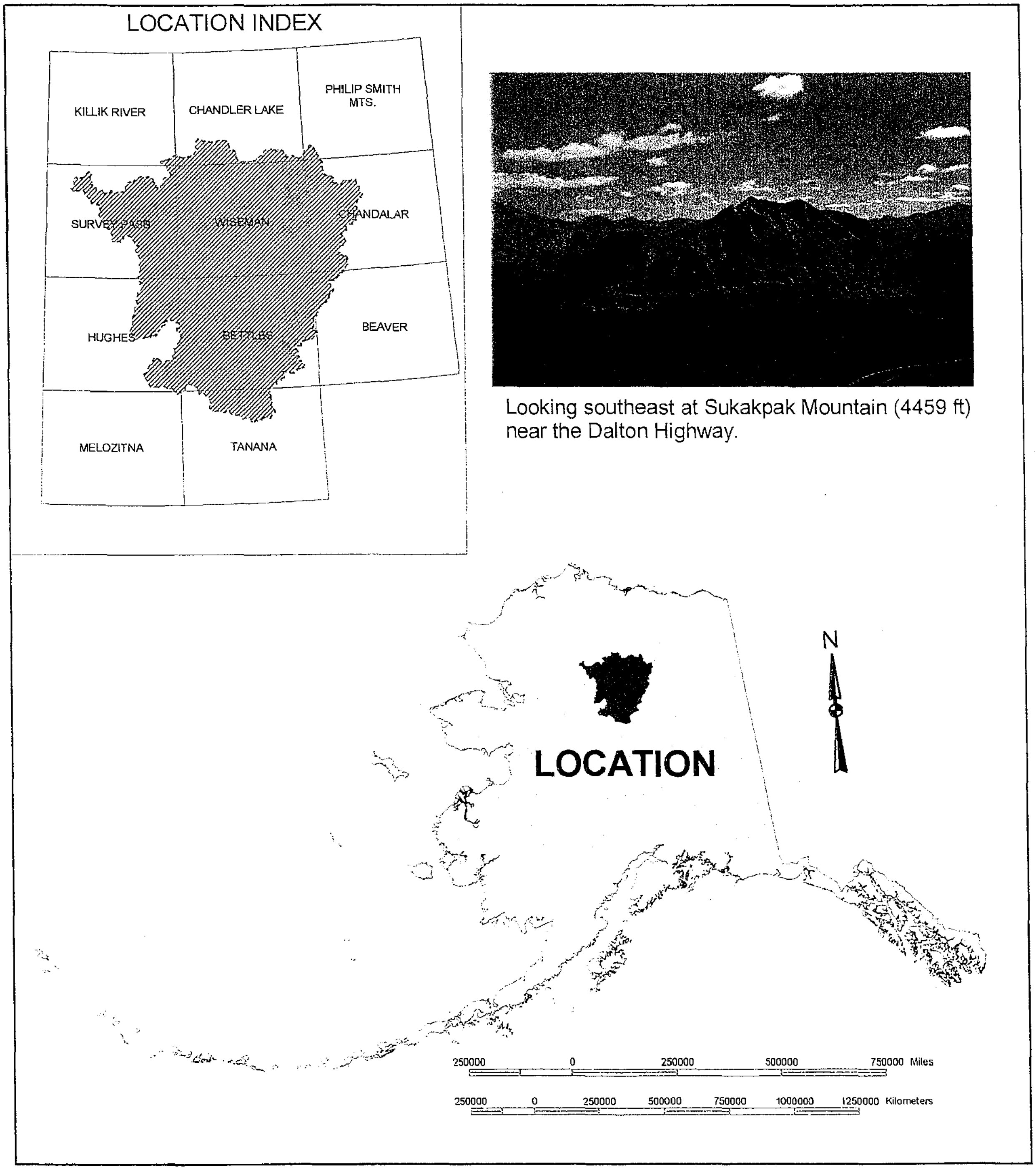

Figure 1. - Location map of the Koyukuk mining district study area, Alaska.

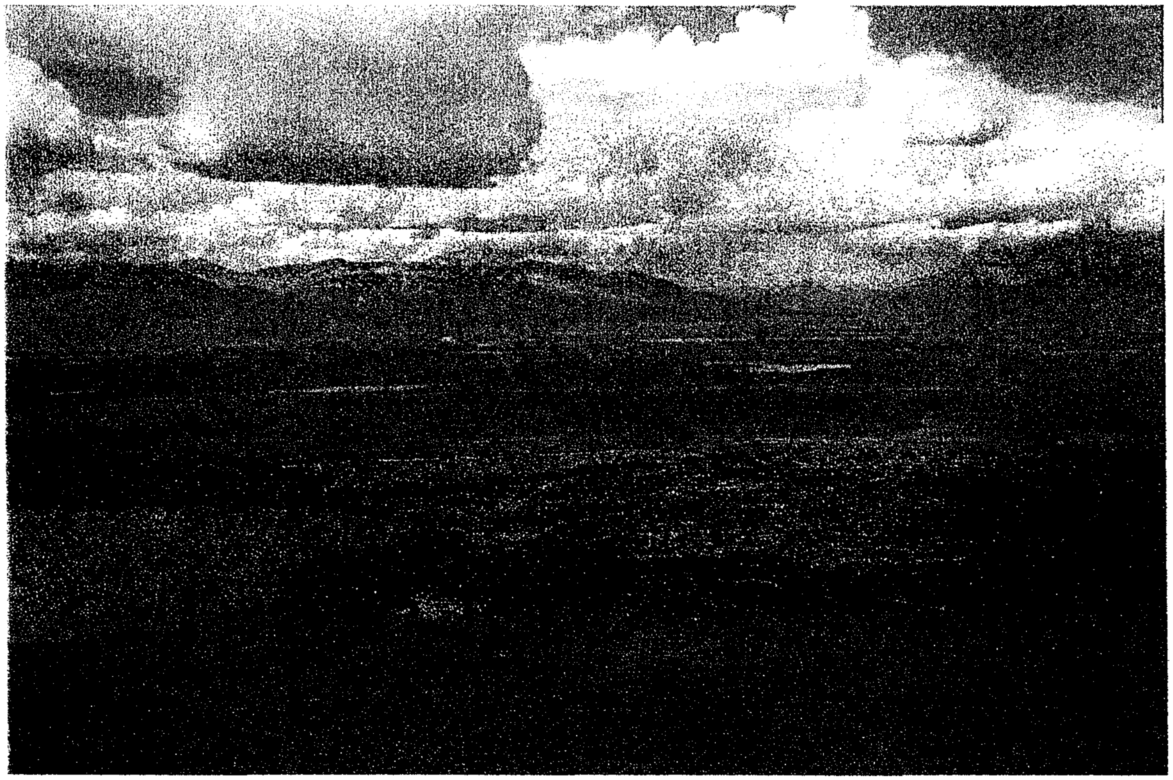

Figure 2 Looking north across the Koyukuk River lowlands towards the Endicott Mountains.

Table 1. Climate Summary for Weather Stations in the Koyukuk Mining District[1]

Location	Average High (°F)	Average Low (°F)	Average Total Precipitation (inches)	Average Total Snowfall (inches)
Allakaket	30.9	5.7	12.3	61.4
Anaktuvuk	21.7	5.3	10.1	57.0
Bettles	30.6	13.5	13.7	84.4
Coldfoot	29.9	8.7	15.4	116.5
Indian Mountain	32.2	16.6	18.7	112.9
Wiseman	32.2	11.8	11.5	80.5
Average	29.6	10.3	13.6	85.5

[1] Data from Leslie, 1986 and Western Regional Climate Center

pipeline. Other federal lands include Gates of the Arctic National Park and the Kanuti Wildlife Refuge, both of which are closed to mineral entry. State land makes up 21% of the district and is generally open to mineral entry. The remaining 7% is held by native corporations: Doyon Corporation being the largest landowner.

Previous Studies

The first published account of exploration into the Koyukuk region of Alaska was made by Lieutenant H.T. Allen, who in the summer of 1885 made a remarkable 2,200 mile journey through Alaska. Allen and his party, under orders from the War Department, traversed up the Koyukuk River from the mouth of the Kanuti River and then up the John River to a point about five miles above its mouth. This exploration produced the first accurate map of the area (Allen, 1887). They were followed by a party commanded by Lieutenant G.M. Stoney of the U.S. Navy, which during the winter of 1885-86 crossed from the headwaters of the Kobuk River to the Alatna River in the northwest corner of the Koyukuk mining district. The Alatna River was then ascended and the Brooks Range divide crossed to Chandler Lake (Stoney, 1900).

Little documented exploration followed until the Klondike gold discovery in 1896 which brought a rush of prospectors into Alaska, including the Koyukuk country. News of subsequent gold discoveries prompted the federal government to send out U.S. Geological Survey (USGS) parties to conduct systematic scientific explorations in the area. The first of these was led by geologist F.C. Schrader in 1899. His party which included topographers, ascended the Chandalar River and descended the Koyukuk via the Bettles and Dietrich Rivers to its mouth. In 1901 a party led by W.J. Peters and including Schrader, ascended the John River to the Brooks Range divide and descended the Colville River to the coast. Schrader was the first to describe the mineral resources of the area in some detail and documented his work with the first published photographs of mining operations in the Koyukuk (Schrader, 1900, 1904). In 1901 another USGS party led by W.C. Mendenhall descended the Kanuti River to the Koyukuk, then ascended 80 miles up the Alatna to Helpmejack Creek before crossing the divide and going down the Kobuk River (Mendenhall, 1902;

Smith and Mertie, 1930; Marshall, 1933, pp. 29-44). In 1909 A.G. Maddren made a brief visit to the district, gathering information on the gold placers, including production (Maddren, 1910). In 1911 a party under the direction of Philip Smith ascended the Alatna River to its head and descended the Noatak for its entire length, describing the geology along the way (Smith, 1913). In 1911 and 1912 Maddren revisited the principal mining areas in the district and made some of the first detailed descriptions of the placer gold deposits (Maddren, 1913). During the winter of 1924, a party led by Philip Smith ascended the Alatna River, but focused geologic work on rocks north of the Brooks Range divide (Smith and Mertie, 1930).

In the following years there was little documentation of activities in the district until 1929 when Robert Marshall, a forester by profession, conducted a series of personal explorations into the headwaters of the Koyukuk. He visited many remote areas and contributed to the knowledge of the geography of the region by naming numerous features and publishing a sketch map of the area. He also described the cultural aspects and socioeconomics of life on the Koyukuk (Marshall, 1931, 1933, 1970). I.M. Reed, a mining engineer with the Territorial Department of Mines, visited the district briefly in 1929. In 1937 he revisited and made the most extensive examination on record of the district's placers (Reed, 1938).

Interest by the USGS in the area resumed in the late 1950s due to geologic studies of the Naval Petroleum Reserve No. 4 which lies north of the crest of the Brooks Range and has a mutual boundary with the Koyukuk. As a result geologic maps were made of the Chandalar (Brosge and Reiser, 1964), Hughes (Patton and Miller, 1966), Melozitna (Patton and others, 1978), and the Survey Pass quadrangles (Nelson and Grybeck, 1980). The Chandalar, Wiseman, and Survey Pass quadrangles were evaluated as part of the Alaska Mineral Resource Assessment Program (AMRAP) which included geochemical surveys by the USGS (Brosge and Reiser, 1972; Marsh and others, 1978a, b).

With completion of the Dalton Highway across the eastern portion of the district, the ADGGS in conjunction with the USGS, began geologic studies of state selected lands adjacent to the road. This resulted in a series of State publications: Dillon and others, 1980-1981, 1986-89; Mosier and Lewis, 1986; Bliss and others, 1988; Mull and Adams, 1989. The U.S. Bureau of Mines did critical and strategic metal investigations in the southeastern portion of the district adjacent to the haul road (Foley and McDermott, 1983; Barker, 1991). Graduate theses and dissertations on the geology and mineral deposits of specific areas within the district include the following areas: Anaktuvuk Pass (Porter, 1962), Chandalar lode mines (Ashworth, 1983), Arrigetch Peaks (Adams, 1983), Upper Bonanza Creek skarns (Clautice, 1987), Endicott Mountains (Gottschalk, 1987; Handschy, 1989), Sukakpak Mountain (Huber, 1988), and the Chandalar Copper Belt (Nicholson, 1990).

Mining History and Production

Reports of placer gold on the gravel bars of the Koyukuk River go back to the period between 1885 and 1890 when minor discoveries were made at Tramway, Florence and Hughes Bars. The area did not receive major attention by prospectors though until the Klondike gold rush era. Beginning in 1899, stampeders disenchanted with the Klondike rush in Canada, worked their way down the Yukon River and prospected its tributaries, including the Koyukuk. This led to the first major discovery in the district when members of the Dorothy party from Boston, Massachusetts found gold near the confluence of Slate and Myrtle Creeks in 1899. Knute Elingson and partners mined off Myrtle Creek the same year (see report cover), making the first "real money" on the Koyukuk (Schrader, 1900, 1904; Marshall, 1933).

In 1900 Myrtle Creek produced 1,900 oz of gold. News of this find and others on nearby Emma and Slate

Creeks sparked a rush of about 1,000 fortune seekers up the Koyukuk River and its tributaries. The settlement of Coldfoot (Plate 1) was established as a supply point for mining operations in the area. The site got its name when some gold seekers reportedly got "cold feet" and turned around at that point on the Koyukuk River (Maddren, 1913; Marshall, 1933).

Gold was discovered on the Hammond River in 1900 and on Nolan Creek in 1901. A shifting of activity to these areas led to the establishment of Wiseman, 11 miles north of Coldfoot, resulting in the eventual abandonment of the latter site. Other strikes occurred on Mascot, Gold, Linda, and Porcupine Creeks. Mascot Creek, which produced about 4,300 oz of gold during 1903, was said to be one of the most profitable in the Koyukuk. The Mascot gold rested directly on bedrock with only a thin gravel cover, making it extremely easy to recover. When compared to other Alaskan placer districts, the Koyukuk proved extremely remote and also one of the most costly to operate in. At the time it was noted as being one of the most northern mining districts in the world (Maddren, 1910, 1913).

Initial production from creeks in the Wiseman area was from shallow placers. These were soon worked out and by 1904 production began to drop off (Appendix C). Rumors of bonanzas on the John River in 1905 sent 400 prospectors in that direction and the Chandalar discoveries in 1906 funneled more gold seekers away from the Nolan area. However interest was renewed with the discovery of extremely-rich buried channels more than 100 feet beneath the surface at Nolan in Creek in 1907. In a little over three months, it is reported that about 5,000 oz of gold was recovered and the following year it was estimated that nearly 250 people were working on the creek (Hill, 1909). The district's greatest production year came in 1909 when 20,230 oz of gold were recovered. The Nolan Creek drainage proved to be some of the richest ground in the district, yielding at least 158,202 oz of gold through 1998. A similar rich deep channel beneath the Hammond River was struck in 1912 and during the following four years over 48,000 oz gold were produced, including a 138.8 oz nugget (second largest in Alaska) (Pringel, 1921; T.K. Bundtzen, written communication, 1999). The Nolan-Hammond area is still the center of mining activity in the district.

Gold was first mined in the central part of the district in 1904 following discoveries near Wild Lake and in Crevice Creek on the John River drainage. Interest in the area took a major jump in 1915 when 572 oz of gold were produced from Jay Creek (Pringel, 1921). Sporadic mining has continued to the present day, concentrated on Crevice, Lake, Jay, and Birch Creeks.

The report of a gold discovery by a native on the Indian River in the southwest corner of the district, prompted J.C. Felix to visit the area in 1910. He found workable placers and began mining the following year. In 1913 approximately 1,550 oz gold were produced. Discoveries followed on nearby Black and Utopia Creeks (Eakin, 1916, pp. 83-84). A dry-land dredge operated on upper Indian River and Black Creek into the early 1960s and a floating dredge worked nearly the entire length of Utopia Creek from about 1939 to 1950.

Mechanized mining in the northern part of the district began in 1940 when a dragline-dozer operation was started on Myrtle Creek, resulting in a major jump in district production. Production dropped to a minimum in 1942 due to enactment of Public Law L208 which curtailed mining in the United States not related to the production of strategic metals. The only recorded lode production occurred the same year when about six tons of antimony ore were mined on Smith Creek as a byproduct of gold mining (Maddren, 1913; Marshall, 1933; Cobb, 1973). Production picked up again after the war, reaching a high of 11,817 oz in 1964 with Nolan Creek being the largest producer. Completion of the Dalton Highway in 1975 allowed for road access to many of the placer mines along the Middle Fork Koyukuk River.

In 1994 Silverado Gold Mines Inc. was the largest producer, recovering 8,024 oz from a large surface and underground operation on Nolan Creek (Figure 3). In addition this operation recovered a 41.4 oz nugget from Nolan Creek (unofficially the 10th largest in Alaska). By 1997 district production had dropped to approximately 540 oz. During 1998, there were thirteen active operations in the district with a minimum of 243 oz of gold produced.

High runoff during the spring of 1998 resulted in the destruction of many mine access roads which operators spent most of the summer reconstructing. In addition a major drop in the price of gold in 1997 dampened enthusiasm towards mining. In the Wiseman area mining took place on Hammond River, Nolan, Linda, Gold, and Porcupine Creeks. In the central portion of the district mining took place on Jay Creek and at a tourist-oriented mine on Birch Creek. Underground drift mines operated on Nolan and Linda Creeks.

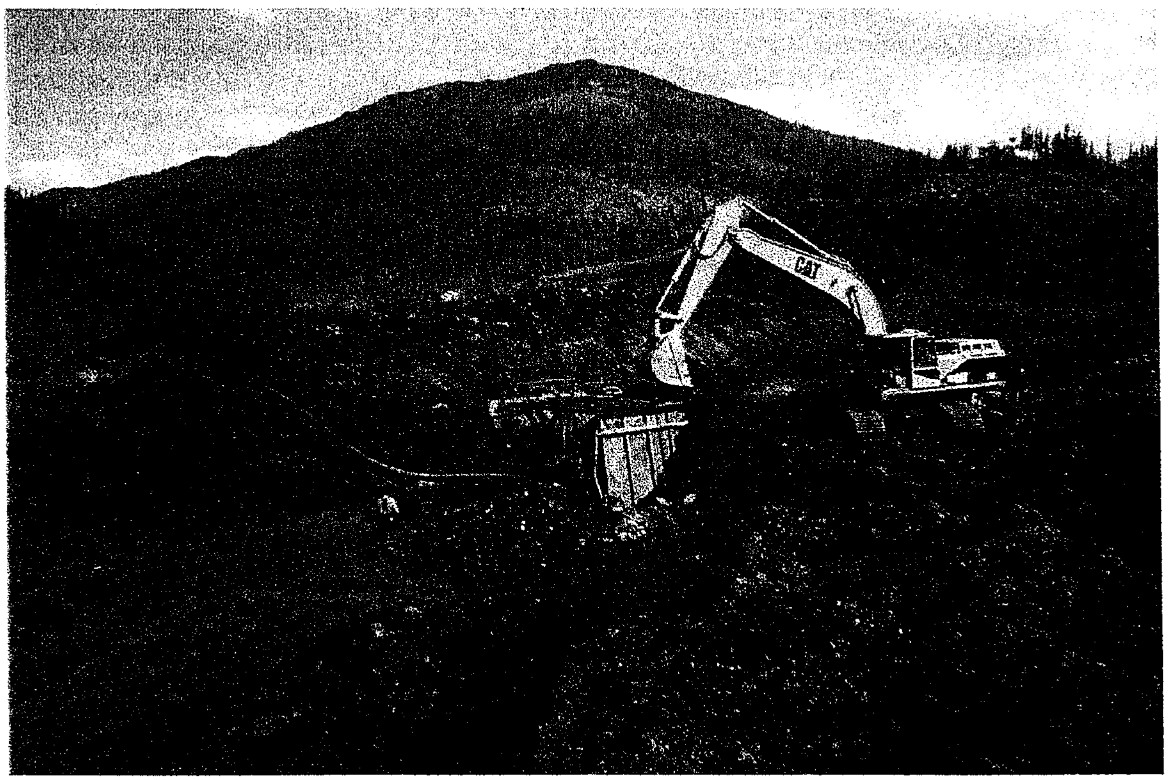

Figure 3 Placer operation on Nolan Creek by Silverado Gold Mines Inc. In 1994, Silverado recovered a 41.4 oz nugget (tenth largest in Alaska) from bench gravels on the east side of the creek.

BUREAU INVESTIGATIONS

A brief examination was made of the district in 1994 when the Alaska mining district studies were administered by the U.S. Bureau of Mines (BOM). After closure of that agency in 1996, this function was transferred to the BLM and work resumed on the project. Prior to beginning field work in 1997, an extensive bibliography on the geology and mineral resources of the district was assembled. Letters were sent to 181 claimants requesting permission to visit their properties and obtain any input they might have in regards to site-specific projects. Initial field investigations focused on documented mines, prospects, and mineral occurrences, followed by prospecting areas having anomalous geochemistry or geology similar to that of documented occurrences. At lode sites rock samples were collected and geologic mapping done in an effort to determine grade and extent of the mineralization. Placer deposits were evaluated by test panning and collection of placer samples. To date 94 days have been spent in the field and 175 sites examined.

As a cooperative effort between ADGGS and the BLM in 1997, an airborne geophysical survey was made of a 533 square mile area in the northeast portion of the district. The BLM provided the funding and selected the area to be covered while the ADGGS administered the project. The survey was done by Sial Geosciences Inc. and On-Line Exploration Services was the field representative. The results of this survey have been published as series of ADGGS Public Data Files and Reports of Investigation (Sial Geosciences Inc., 1998a-d). The BLM has also funded publication by the ADGGS of the Chandalar C-5 geologic map (Dillon and others, 1996) which lies within the area covered by the airborne survey.

In 1998 AMRT conducted ground magnetic and electromagnetic conductivity surveys at five sites as a followup to the airborne geophysical work (Figure 4). These surveys delineated several anomalies on the ground. Additional geophysical studies were conducted in the form of ground penetrating radar (GPR) profiles, completed at three known placer deposits to identify channel locations and depth to bedrock.

In a partnership with Silverado Gold Mines Inc., AMRT supported a geology graduate student, who in 1998 mapped the geology and assessed lode mineralization in the Nolan-Hammond River area. This work will be compiled as a thesis to fulfill the requirements of a masters degree in geology at the Technical University of Clausthal in Germany.

Sampling Methods

A total of 960 samples have been collected to date as a part of the Koyukuk study. These consisted of rock, pan concentrate, stream sediment, placer, and soil samples.

Rock samples were collected from the following sites: **1) outcrop** - rock is in place; **2) rubblecrop** - rock fragments overlying bedrock which is not visible, but implied; **3) float** - loose rock fragments or cobbles not necessarily found near or overlying bedrock of the same composition.

Rock samples are of six types: **1) continuous chip** - small rock fragments broken in a continuous line for a measured distance across an exposure; **2) spaced chip** - collected in a continuous line at designated intervals across an exposure; **3) representative chip** - sample volume collected in proportion to volumes of different rock types observed at a specific locality; **4) random chip** - collected at random points from an apparently homogenous mineralized exposure; **5) grab sample** - collected more or less at random from float or outcrop; **6) select sample** - collected from the highest grade portion of a mineralized zone.

Figure 4 Ground magnetic and VLF survey, near the Ginger Prospect, Big Spruce Creek.

Pan concentrate samples were collected at sites where heavy minerals might accumulate such as stream gradient changes from steep to moderate, and the downstream side of boulders, and on bedrock. A heaping 14-inch gold pan of coarse gravel and sand is panned down to 0.75 oz of fine concentrate which was kept for chemical analysis. The presence of heavy minerals in the concentrate such as gold, sulfides, magnetite, and garnet were noted in the field.

Stream sediment samples consisted of composites of silt and clay collected from the active portion of the stream bed. Samples were collected with a plastic trowel and stored in geochemical envelopes made of water resistant paper.

Placer samples consist of 0.1 cubic yards of stream or bank material run through a 10- by 48- inch sluice box and then panned down to produce approximately 2.5 oz of concentrate. Visible gold was recovered from the sample and weighed. Remaining concentrates were examined with microscope and ultraviolet lamp to determine mineralogy where possible. The concentrates were then forwarded to the laboratory for geochemical analysis.

Soil samples were collected from the thin C horizon characteristic of Arctic soils with a stainless steel hand auger. The samples were stored in the same geochemical envelopes used for stream sediment samples.

Coal samples were collected from channels cut a minimum of 1 foot into outcrops. The coal was stored in airtight bags to retain original moisture content during shipment.

REGIONAL GEOLOGY

Proterozoic through Mesozoic metasediments make up the majority of the rock types in the Koyukuk district. Segments of these rocks were intruded by Devonian and Cretaceous plutons and metamorphosed during the mid-late Mesozoic Brooks Range orogeny. Cretaceous sediments fill a basin in the central portion of the district and the higher elevations have undergone extensive glaciation.

The Koyukuk district is underlain by three main geologic terranes (Figure 5). The oldest is the Ruby terrane which underlies the eastern margin of the district and makes up a portion of the Ruby Geanticline; a linear uplift of pre-Cretaceous rocks that diagonally crosses central Alaska. The geanticline is composed of autochthonous Proterozoic(?) through Late Paleozoic metasedimentary rocks consisting of miogeosynclinal pelitic schist, quartzite, greenstone, carbonate rocks, and quartzo-feldspathic gneiss. These rocks were metamorphosed in the Early Cretaceous to greenschist facies with areas of local almandine-amphibolite facies and glaucophane-bearing blueschist mineral assemblages. It is extensively intruded by mid-Cretaceous granitic plutons. The Ruby Geanticline may have been contiguous with the Arctic Alaska terrane to the north and possibly a portion of the southern Brooks Range that was rotated or displaced in Mesozoic time (Mull and Adams, 1989, p. 27).

The continentally-derived Arctic Alaska terrane makes up the northern half of the district and underlies the central and eastern portions of the Brooks Range Province. It is composed of Proterozoic(?) through Mesozoic sedimentary, metasedimentary, and volcanic rocks, including an extensive carbonate sequence, confined mostly to the northern portion of the terrane. The carbonate sequence and associated volcanic rocks were intruded by early to middle Devonian premetamorphic granitic and mixed felsic-mafic intrusive complexes. These rocks host tin-bearing skarns in the Arrigetch Peaks and copper-bearing porphyries and skarns north of the Bettles River.

The oceanic Upper Paleozoic-Mesozoic Angayucham terrane makes up the central portion and contains the youngest and least metamorphosed rocks in the area. The base of the terrane is composed of a Permian-Jurassic sequence of mafic and ultramafic volcanic and intrusive rocks consisting of pillow basalt, diabase, gabbro, and dunite with subordinate chert, limestone, and serpentinite. The igneous rocks, which are considered to be part of a dismembered ophiolite, locally contain small podiform chromite occurrences. This complex is unconformably overlain by Early and Late Cretaceous graywacke and igneous- and quartz-pebble conglomerate which filled the lower Koyukuk basin, leaving the igneous rocks exposed only on the basin margins. The Late Cretaceous sediments contain some coal beds. This terrane appears to be the erosional remnants or klippen of allochthonous rocks that were obducted over rocks of the Arctic Alaska terrane in the Late Mesozoic (Mull and Adams, 1989). During the Jurassic through Cretaceous Brooks Range orogeny, obduction of the younger Angayuchum terrane onto the Arctic Alaska terrane resulted in imbricate thrusting, northward-verging folding, and tectonic-burial metamorphism in the latter. Metamorphism was most intense along the boundary of the Arctic Alaska terrane with the Angayuchum terrane resulting in formation of a belt of schistose rocks along the south flank of the Brooks Range. There is a broad scale equivalence between this schist and the schist belt which hosts volcanogenic massive sulfide deposits in the Ambler district, 90 miles to the west (Mull and Adams, 1989, p. 161; Nicholson, 1990). These schistose rocks host some of the major placer gold-producing drainages in the district.

The Angayuchum and adjoining Ruby terranes are intruded by a series of mid-Cretaceous granitic plutons which stitch together the boundary between the two (Mull and Adams, 1985, p. 158). In the upper Kanuti River area the granites host tin-bearing greisens (Barker and Foley, 1986). The granites are deeply eroded

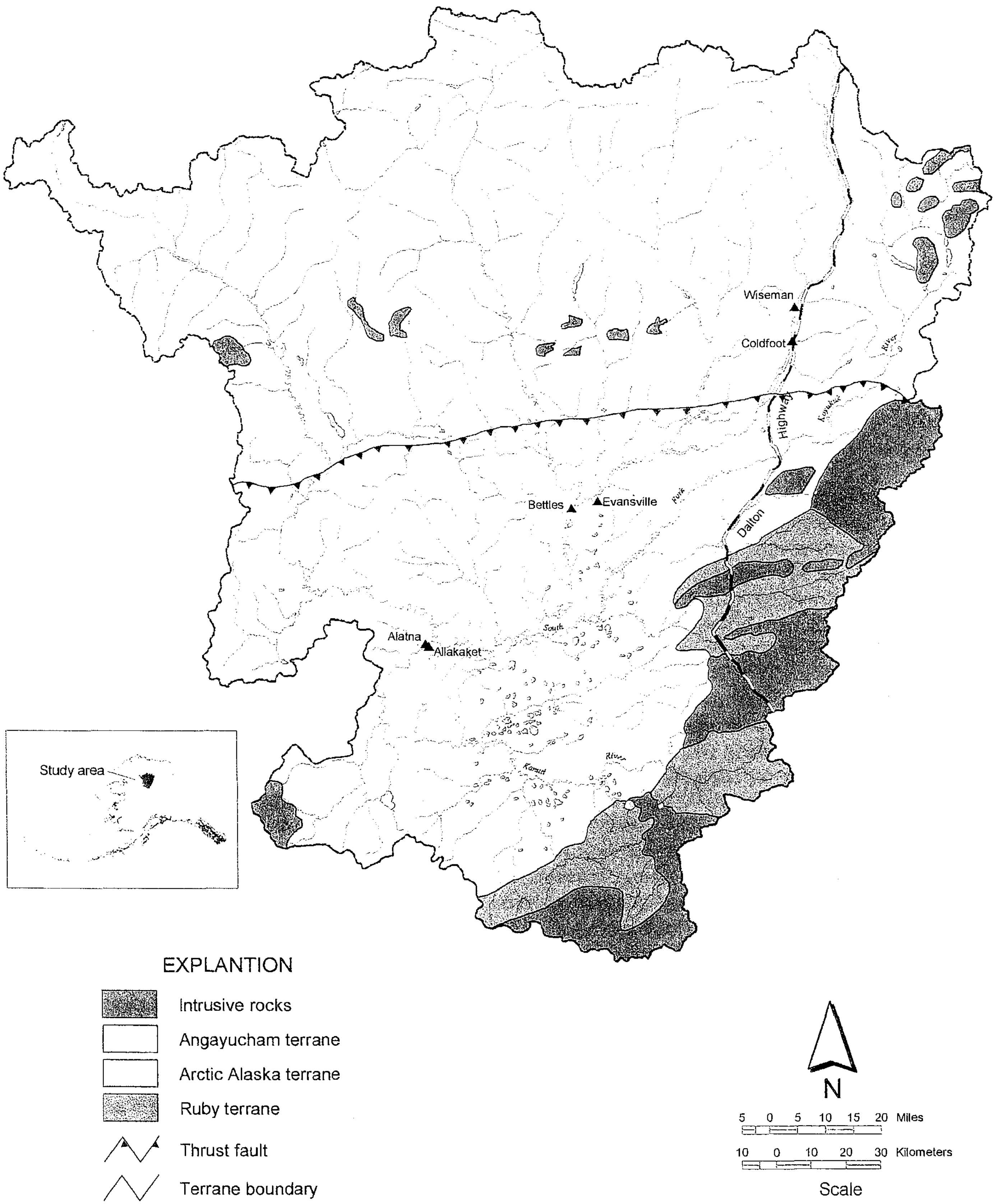

Figure 5. Tectonostratigraphic terranes in the Koyukuk mining district.
(from Moore and Others, 1994 and Beikman, 1980)

and the resulting alluvium in nearby drainages contains placer tin concentrations. The granitic rocks host tungsten-bearing skarns near the headwaters of Bonanza Creek (Clautice, 1987).

Cretaceous andesitic volcanic rocks and interbedded graywacke and mudstone are intruded by intermediate intrusive rocks near Indian Mountain in the southwestern corner of the district. Placer gold deposits in the area appear to be associated with hornfelsed rocks near intrusive contacts (Patton and Miller, 1966; Patton and others, 1978).

The northern Koyukuk has been affected by a series of at least four major glacial advances during the Tertiary and Quaternary periods which shaped the present landscape and played a significant role in formation of the district's placer deposits. The last advance ended about 10,000 years ago and cirque glaciers still exist in the highest portions of the Endicott Mountains (Mull and Adams, 1989).

MINERAL DEPOSIT TYPES

Placer Gold

Gold placers are the only mineral deposits in the district that have been extensively developed. Placers are concentrated in the southwestern and northeastern portions of the district with the greatest production coming from the Coldfoot-Wiseman area. Placers in the Wiseman and Wild Lake areas are related to a belt of schistose rocks that lie along the southern boundary of the Arctic Alaska terrane, while those near Indian River and Prospect Creek appear to be related to hornfelsed rocks near intrusive contacts.

The Koyukuk placers range from shallow unfrozen deposits that are relatively easy to mine to deeply-buried permanently frozen gravels. The formation of these deposits is closely tied to the glacial history of the area which has been affected by at least four major phases of glaciation (Mull and Adams, 1989, pp. 23-26). Placer deposits consist of three basic types:

1) Shallow placers concentrated in modern stream and river valleys. Gold is concentrated in fractured bedrock and the lower 1 to 2 feet of the overlying stream gravel. These were the first placers in the district to be discovered and exploited due to ease of mining. Mascot Creek is the most profitable example of this placer type.

2) Placer gold concentrated on bedrock in deeply incised bedrock channels that have been covered by 10 to 140 feet of stream gravel. The gold was probably deposited on bedrock in pre or interglacial periods and then covered due to a raising of base-level related to subsequent glacial activity. These channels, which occupy side valleys to the Middle Fork of the Koyukuk drainage, are truncated by it, indicating that they predate the last major glacial advance in the area. These deposits proved to be the richest in the district, but also the most difficult to exploit as considerable overburden has to be removed to reach gold-bearing gravel. Consequently these types have been mined mostly by underground methods with the channels on Nolan Creek and Hammond River being the richest. These placers are known for coarse showy nuggets. The second largest gold nugget found in Alaska (138.8 oz) was recovered from the Hammond River.

3) Placer deposits concentrated on benches cut in bedrock lying anywhere from 2 to 360 feet above modern stream levels. These benches were cut when streams were flowing at higher levels, possibly due to damming by glacial ice. Erosion of these bench placers through downcutting by modern streams has probably produced the shallow placers. The gold varies from rounded water-worn nuggets in the deep channels to angular rough gold with attached quartz fragments on the benches. The most profitable bench placers are located at Gold Bench on the South Fork Koyukuk River and on Nolan Creek. The mean fineness for Koyukuk gold is 914 (Maddren, 1913, pp. 75-83; Reed, 1938, pp. 62-72; Cobb, 1973, pp. 155-160; Metz and Hawkins, 1981, p. 36).

Mineralized Quartz Veins

Mineralized quartz veins in the district are of three general types. The first consists of massive galena-bearing quartz-ankerite veins concentrated in the lower Michigan Creek area (Plate 1, map no. 104)[4]. Samples from these veins contain up to 2.6 oz/ton silver. The second type consists of stibnite-bearing

[4] Refer to Plate 1 for location unless text figure is indicated. See Appendix B for analytical results.

quartz veins. The most extensive examples occur along a faulted contact in the Sukakpak Mountain area (map nos. 329-330). Samples from these veins contain up to 1.4 oz/ton gold. Veins of similar composition, though much smaller, occur in the Smith Creek area (Figure 8, map nos. 178-186). Samples from these veins contain up to 12.2 ppm gold. The third type consists of quartz veinlets which fill fractures cutting phyllite and concentrated mostly in the Vermont Creek area (Figure 8, map nos. 162-167). Samples from these veinlets contain up to 1.85 oz/ton gold. In addition they contain ankerite-pyrite gangue and trace amounts of arsenic and antimony.

Tin-bearing Granites

A series of Early Cretaceous large granitic plutons intrude phyllite and schist of the Ruby terrane and mafic/ultramafic rocks of the Angayuchum terrane in the southeast corner of the district. They are composed mainly of coarsely porphyritic biotite granite, but locally include granodiorite and monzonite. The Sithylemenkat pluton (map no. 381) is a two-phase granite that is locally altered and contains low-grade disseminated tin and tungsten. Weathering of the granite has produced tin-bearing placers in drainages surrounding the pluton (WGM Inc., 1980a, c; Warner, 1985, p. 5; Mull and Adams, 1989, p. 28).

Podiform Chromite

A belt of Permian-Jurassic mafic/ultramafic rocks extends for 62 miles along the southern border of the Angayuchum terrane in the southeastern corner of the district. The ultramafic rocks are composed of serpentinized dunite and pyroxene-peridotite, pyroxenite, gabbro, diabase, altered pillow basalt, and associated chert.. These rocks represent a dismembered ophiolite. In the Caribou Mountain area (map no. 380), the dunites contain concentrations of chromite. Sampling indicates an average content of 1.7% chromium (Foley and McDermott, 1983; Mull and Adams, 1989, p. 33).

Massive Sulfides

The Koyukuk mining district contains lead-zinc-copper massive sulfide occurrences, several of which have undergone detailed investigations including geophysics and drilling. Some occur within the Brooks Range schist belt and are thought to be contemporaneous with volcanogenic massive sulfide deposits in the Ambler district to the west. This includes the Ann Group and Buzz prospects (map nos. 17-18) which are located in the northwest part of the district. The sulfides are hosted by sericitic schist, graphitic schist, and marble. Sulfide minerals occur in exposures up to 9 feet in diameter and include up to 25% galena, 25% sphalerite, and 50% pyrite. These occurrences have also been interpreted to be polymetallic veins or remobilized stratabound sulfides (Nokleberg and others, 1987).

The Venus prospect, located in the Chandalar Copper Belt in the northeast portion of the district, contains massive magnetite, pyrite, and chalcopyrite. The massive sulfides, which occur as boulders and in outcrop, are concentrated extensively along a 0.25 mile stretch of an unnamed tributary to Big Spruce Creek (map nos. 306-308) and are intercalated with sulfide-bearing skarn outcrops.

The Luna prospect (map no. 291), north of the Venus prospect, is another massive sulfide occurrence in the Chandalar Copper Belt. Sphalerite, chalcopyrite, pyrrhotite, and pyrite occur as massive pods, veins, and stringers. The host rocks include schist and calc-silicate rocks (WGM, 1979d; WGM, 1983, pp. 30). The massive sulfides at Luna are believed to be volcanogenic in origin (WGM, 1979d; Nicholson, 1990) or an intrusive related skarn (WGM, 1983).

Porphyry Copper

Devonian granitic plutons intrude the Arctic Alaska terrane, in the northeastern portion of the Koyukuk district. The pluton, which outcrops prominently at Horace Mountain and sporadically throughout the Chandalar Copper Belt, is a silica oversaturated, metaluminous, porphyritic biotite/hornblende granite and hornblende-biotite granodiorite prophyry (Newberry, Dillon, and Adams, 1986). The Venus prospect, on Big Spruce Creek, is a well-investigated porphyry copper prospect. A porphyry granite outcrops for approximately 1 mile along the creek (map nos. 308-310). The granite-granodiorite contains 1 to 3% disseminated pyrite and chalcopyrite, with minor malachite and abundant limonite staining.

Tin-, Copper-, and Tungsten-bearing Skarns

Localized zones of skarn are associated with Devonian and Cretaceous granitic plutons that intrude the extensive Devonian carbonate units of the Arctic Alaska terrane and the much thinner carbonate units of the Ruby terrane. Prospects cited in this report include tin-bearing skarns within the Gates of the Arctic National Park, copper-bearing skarns north of Bettles River, and tungsten-bearing skarns near Bonanza Creek.

Tin-bearing skarns are located in the Gates of the Arctic National Park, near the Arrigetch Peaks (map nos. 10-13). The granites that comprise the Arrigetch Peaks are characterized by peraluminous, S-type granites emplaced at moderate depths. The skarns are anomalous in tin, copper, and zinc (Newberry, Dillon, and Adams, 1986). The skarn prospects north of Bettles River, however, are characterized by low tin and anomalous gold, silver, and copper. The intrusion has a relatively shallow emplacement and is generally metaluminous, I-type granite and granodiorite (Newberry, Dillon, and Adams, 1986).

A tungsten skarn prospect is located east of the South Fork Koyukuk River, near Bonanza Creek (map no. 379). The Cretaceous intrusive is a multiple phase granite-monzogranite with abundant pegmatite and aplite. The host rocks include pelitic and calcareous schists; however, the carbonate units are discontinuous and relatively thin (<50 feet thick) (Clautice, 1987). The prospect has been investigated by several mining companies and government agencies. Select trench samples contained pyrrhotite, chalcopyrite, and coarse-grained scheelite.

SIGNIFICANT RESULTS

Gates of the Arctic National Park

The Gates of the Arctic National Park (GANP) lies within the Hammond subterrane of the Arctic Alaska terrane. The most prevalent units are thick, Devonian sedimentary formations including the Skajit Limestone, Beaucoup Formation, and Hunt Fork Shale. The sedimentary units are intruded locally by Devonian granitic plutons. Both the sedimentary and granitic rocks were subsequently metamorphosed to greenschist facies during the Jurassic through Cretaceous Brooks Range orogeny.

There are 36 documented mineral occurrences within the Koyukuk mining district that are located within GANP. Of these sites, 25 have been visited at least once and 2 sites immediately outside the district have also been visited.

Exactly half of these sites are placer gold occurrences and half are lode prospects. There were no significant placer gold anomalies in any reconnaissance stream sediment or pan concentrate samples collected within the park boundaries. The lode prospects investigated include skarns near the Arrigetch Peaks and Sheep Creek as well as a lead prospect at Bonanza Creek.

The skarns in the Arrigetch Peaks (map nos. 10-13) occur on the margins of the upper Devonian(?) Arrigetch Pluton which intrude thick Devonian carbonate units. The pluton is composed of silica oversaturated and peraluminous granite. Skarns include calc-silicate, magnetite, and sulfide-rich varieties (in decreasing abundance), with transition types also present (Newberry, Dillon, and Adams, 1986).

Samples of magnetite-rich and sulfide-rich skarns were collected. A select sample of magnetite-rich skarn (map no. 11, sample 10827) collected 2 miles northeast of the Arrigetch Peaks contained 902 ppm tin, 904 ppm copper, and 1674 ppm zinc. The magnetite-rich zones extended for a maximum of 100 feet along strike and occurred in ribbons within calc-silicate rock and marble units. A 0.5 foot-wide sulfide-rich quartz vein (map no. 13, sample 10864) on the margin of a magnetite zone yielded 60 ppb gold, 4492 ppm copper, 859 ppm bismuth, and >10000 ppm arsenic.

Minor copper mineralization has also been documented for approximately 10 miles along the southern border of the park near John River (map nos. 37-40). Field examination and published data indicate the mineral occurrences are stratabound, limited to a few tens of feet in strike and up to 5 feet in width (WGM, 1978).

In upper Sheep Creek, podiform copper mineralization was traced along a marble-schist contact for approximately 1700 feet along strike (map no. 39). Bornite and chalcopyrite were observed in quartz veins and fracture fillings parallel to bedding in the marble which overlies the schist. A select sample of the marble (10783) contained 9.0% copper. The quartz-mica schist is locally mineralized, near the contact. One select sample of quartz vein (10805) contained 26 ppb gold, 16.53% copper, and 78.6 ppm silver. The vein was 15 feet long and 3 to 6 inches wide, occasionally widening to 1 foot.

The unnamed prospect (map no. 40) immediately northeast of the Sheep Creek site contained similar podiform copper mineralization. A select sample of micaceous schist float (10806) contained 17 ppb gold, 68.9 ppm silver, and 11% copper. The observed mineralization was found in float below the limestone and schist contact.

Abundant quartz veinlets occur in a 35- by 150-foot rusty-weathering outcrop of intensely fractured and dolomitized metamorphic rock on the west slope of the ridge between Conglomerate and Bonanza Creeks (map no. 118). The veinlets contain trace galena, sphalerite, and ankerite(?). A select sample of quartz float found below the outcrop (10881) contained 3510 ppm zinc, 3438 ppm lead, and 3772 ppm arsenic. This exposure may represent a northwest-trending shear zone that cuts through the ridge.

Mettenpherg Creek

The bedrock in the Mettenpherg Creek area includes several Devonian and Pre-Devonian units: the Skajit Limestone, interbedded clastic sedimentary units (schist belt), thin mafic and felsic volcanic layers, and granitic plutons near Ernie Lake and Sixtymile River. The units are part of the Arctic Alaska terrane. All of these units were subsequently metamorphosed to greenschist and amphibolite facies during the Jurassic through Cretaceous Brooks Range orogeny (Dillon and others, 1980).

The Ann Group (map no. 17), located 3.5 miles east of Ernie Lake, contains stringer, disseminated, and massive sulfides. Samples were collected from a galena-sphalerite-rich pod which was positioned between a graphitic schist and a sericite-talc schist. A 5.5 foot-wide continuous chip sample (11020) across the entire pod contained 2478 ppb gold, 2.64 oz/ton silver, 3.34% lead, and 4.31% zinc. Approximately 500 feet downstream, an outcrop containing minor pyrite and barite was also observed.

The Buzz prospect (map no. 18) lies approximately 2,300 feet upslope and northwest of the Ann Group. Two galena-sphalerite-rich exposures were sampled. One of the outcrops was a massive sulfide lense exposed on the face of a marble bluff. A 4.4 foot-wide continuous chip sample (11043) contained 2337 ppb gold, 5.73 oz/ton silver, 7.23% lead, and 22.69% zinc. The other exposure measured 8 feet by 9 feet and was within a chlorite-sericite schist interbed of the same marble unit. A representative chip sample (11044) contained 2435 ppb gold, 2.20 oz/ton silver, 3.93% lead, and 4.70% zinc. The gold values of the two samples from the Buzz prospect were the highest of all massive sulfide samples in the district and warrant further investigation.

The ABO prospect (map nos. 19-20) is located in the northeastern headwaters of Mettenpherg Creek, south of Sixtymile Creek. The bedrock consists of the Hunt Fork Shale and the underlying Skajit Limestone. The limestone contains dolomitic zones and quartz veining along with disseminated sphalerite and galena. A select float sample (map no. 19) contained 1.80% lead, 22.41% zinc, and 77 ppb gold. Sphalerite was also observed in a trench which exposes a silicious dolomite-marble contact. A 1.2 foot-wide continuous chip sample (map no. 20) contained 12.92% zinc and 0.34% lead.

The presence of pods of massive galena, sphalerite, pyrite, and chalcopyrite along with adjacent barite occurrences indicates the Ann Group and Buzz prospects are possibly volcanogenic in origin. The original rocks and associated base metals may have been remobilized during metamorphism (WGM, 1977, pp 11). Others believe the sulfides to be associated with polymetallic veins (Nokleberg and others, 1987).

John River

The John River, which flows south from the crest of the Brooks Range, bisects the Arctic Alaska and the Angayucham terranes. Placer and lode prospects are confined to the Arctic Alaska terrane, which lies at the southern boundary of the Wiseman quadrangle.

Sampling was conducted at several tributaries of the John River reported to contain placer gold: McKinley, Rock, Sixtymile, McCamant, Crevice, and Bullrun Creeks. Evidence of mining was observed at McCamant, Bullrun, and Crevice Creeks. A pan concentrate sample from Bullrun Creek (map no. 24) contained >10000 ppb gold. A pan concentrate from Crevice Creek (map no. 27) contained 27.12 ppm gold. Finally, a pan concentrate from McKinley Creek (map no. 29) contained 625 ppb gold.

Two unnamed copper occurrences (map nos. 37-38) lie along a marble-schist contact, very similar to that found at upper Sheep Creek (see page 20). A select sample of brecciated Skajit limestone float (map no. 37) contained 585 ppm copper and 1744 ppm lead. A select sample (map no. 38, sample 10884) of the underlying chlorite-quartz schist contained 23 ppb gold and 1664 ppm copper. The mineralization is podiform in nature.

Wild Lake

The bedrock surrounding Wild Lake (Figure 6) is predominantly Devonian Skajit Limestone and underlying silicious clastic rocks (phyllite and schist). Greenstone-greenschist-metabasite occur on Mathews Dome and at Sentinel Rock (Chipp, 1972). The units are part of the Arctic Alaska terrane. Placer mining has been concentrated on the east side of the lake at Surprise, Spring, and Lake Creeks.

Old boom dams, stacked rocks, and cabin remains occur along a two-mile stretch of Surprise Creek, a northeast tributary of Wild Lake. However, most mine workings are concentrated along a 500-foot stretch of creek about 0.5 miles above the stream mouth. Miners removed barren overburden, exposing gold-bearing gravel in the lower few feet of material lying on quartz-chlorite-schist bedrock. The canyon is narrow with steep walls, and gold-bearing gravel appears to be mostly mined out.

Numerous test pans taken from gravel lying bedrock along Surprise Creek contained no visible gold, but laboratory analysis showed several to be anomalous in gold. One pan concentrate sample (Figure 6, map no. 56) contained 3889 ppb gold. A pan concentrate (Figure 6, map no. 53, sample 11038) collected from an east tributary to Surprise Creek contained 64 ppb gold, but the stream was not investigated. At the same site, a piece of malachite-stained chlorite-quartz-schist (11036) contained 861 ppm copper. A piece of limonite-stained quartz-carbonate float from the stream bed (Figure 6, map no. 55) contained 163 ppb gold and 867 ppm strontium. Limonite-stained quartz veins in schist on the ridge north of Surprise Creek (Figure 6, map nos. 46-50) were sampled, but contained no significant metal values.

Spring Creek has been extensively mined in a manner similar to nearby Surprise Creek as evidenced by stacked rocks and cabin remains. No visible gold was observed in six pan concentrate samples taken along a 1.2 mile stretch of the creek (Figure 6, map nos. 58-63), but laboratory analysis showed all to be anomalous in gold - averaging 1260 ppb. On nearby Surprise Creek pan concentrates contained lower gold values. For this reason Spring Creek warrants further investigation for possible lode gold sources.

Lake Creek has the longest mining history of the streams in the area, operating intermittently from about 1904 into the 1990s. A mining operation was active near the creek mouth on the southeast shore of the lake in 1996, but there has been no activity since. Mining appears to have been concentrated in two areas: a narrow stretch of creek 1.5 miles up from the mouth of Lake Creek and on the lower creek just above where it breaks out onto an alluvial fan.

Sluice concentrates from the lower mine site contain up to 5930 ppb platinum (Figure 6, map no. 73,

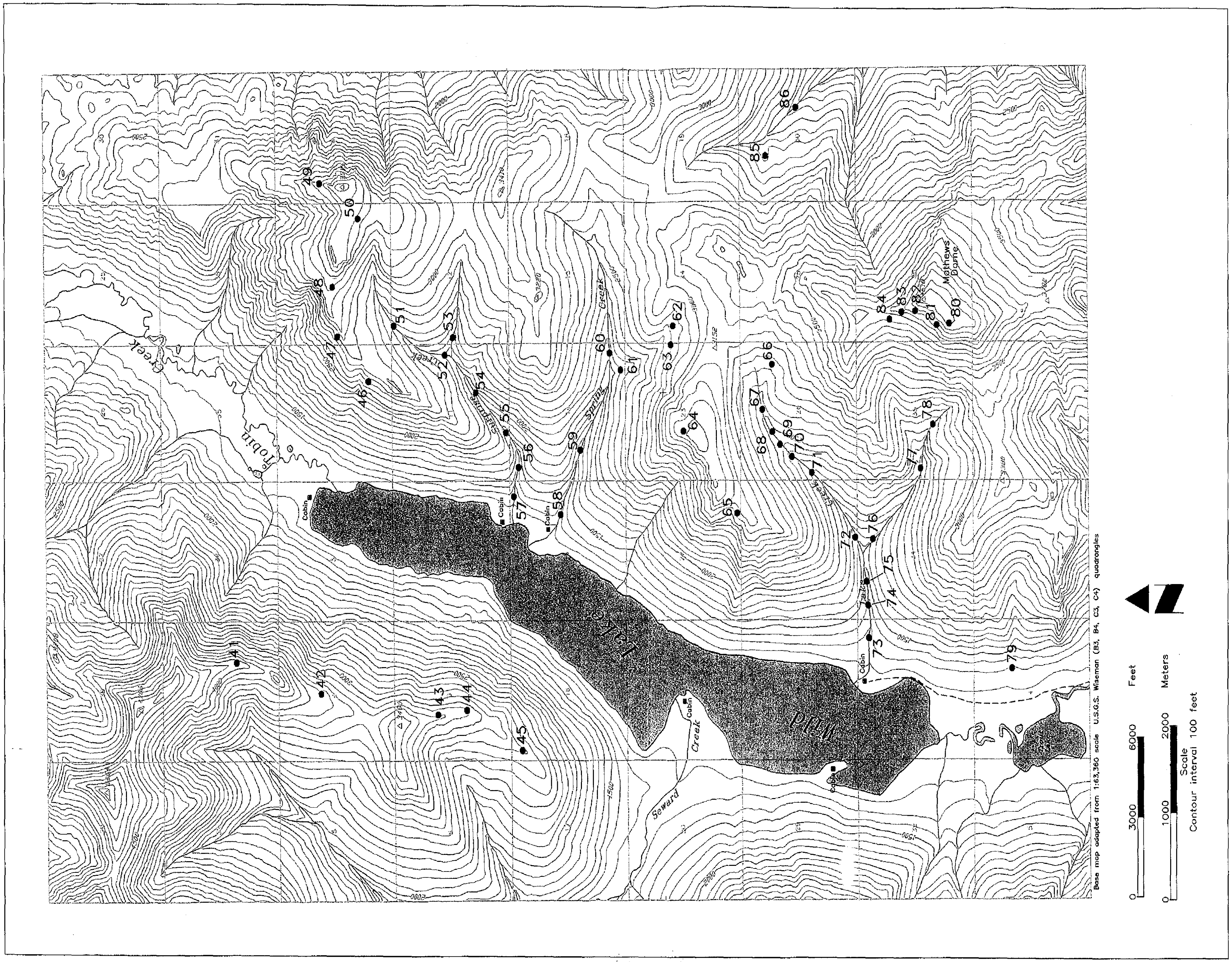

Figure 6. -- Sample location map of the Wild Lake area, Koyukuk mining district, Alaska.

sample 10781), 976 ppm tungsten (Figure 6, map no. 74, sample 8055), 0.44% bismuth and 1750 ppm arsenic (Figure 6, map no. 73, sample 10762). Pan concentrate samples collected along a 1.3 mile stretch of the creek were all anomalous with the highest containing 3043 ppb gold (Figure 6, map no. 67); however, no visible gold was observed. Bedrock is composed mostly of muscovite-chlorite-schist containing varying amounts of carbonate. Numerous quartz lenses and veinlets which cut the schist bedrock are of three types: **1)** lenses of metamorphic quartz which lie parallel to cleavage, **2)** narrow quartz veinlets that run parallel to schistosity, and **3)** quartz-carbonate veinlets which crosscut the other two types. Quartz float was found to contain disseminated pyrite, chalcopyrite, and what is either tetrahedrite or tennantite (Figure 6, map no. 68). Samples collected from the veins and the schist bedrock did not contain anomalous precious metal values. A 300 foot-wide greenstone schist dike reported by Reed (1938, p. 123) to cross the creek was not located.

A pan sample (Figure 6, map no. 79) collected from an eastern tributary to the Wild River, south of Wild Lake, contained 4267 ppb gold. The location is below Sentinel Rock, a reported greenschist-greenstone contact (Chipp, 1972), and warrants additional investigation.

Isolated quartz-stibnite veins anomalous in gold have been documented by previous studies (Chipp, 1972; Dillon, Lamal, Huber, 1989). Minor copper mineralization has also been documented at a few, isolated occurrences. North of Matthews Dome, malachite staining and minor tetrahedrite(?) occur in a calc-schist and in a crosscutting, vertical quartz vein. A 3 foot-wide continuous chip sample of the calc-schist (Figure 6, map no. 83, sample 11017) yielded 8631 ppm copper. At the same site, a select sample of a crosscutting quartz vein (11016) contained 4003 ppm copper, 62 ppb gold.

Wild River and Tributaries

Flat Creek is a large eastern tributary of the Wild River. The mapped bedrock units of the area are predominantly Devonian Hunt Fork Shale and Skajit Limestone. Two active placer operations exist on tributaries of Flat Creek - at Birch and Rye Creeks. On Birch Creek, an eastern tributary of Flat Creek, a tourist-oriented mine has been operating for the past few years. A mechanized operation was active on Jay Creek, a northern tributary of Rye Creek.

Gold was discovered on Birch Creek in 1904 and mining activities produced $1800 in the first year (Reed, 1938). Subsequent drift mining was done, though the results are not known. The current placer operations at Birch Creek are directed towards tourists. Operators remove stream gravels down to bedrock with dozers. They are followed by paying customers who use gold detectors, pans, sluices, or dredges to find gold. Several coarse nuggets weighing up to 10.75 oz have been found at the site. A rubblecrop sample of quartz mica schist (map no. 88) collected on a ridge north of Birch Creek contained 35 ppb gold and 1767 ppm arsenic; however, no lode gold sources in the area have been documented.

Rye Creek and its tributary, Jay Creek, have been mined since 1912. Production has included sluicing and drifting operations, producing $35,000 worth of gold by 1938 (Reed, 1938). The bedrock at Rye Creek is predominantly limestone with calc-schist and chlorite schist. At the headwaters, the schistose units are dominant. A pan concentrate sample collected from Jay Creek (map no. 99, sample 10887) contained >10,000 ppb gold. Samples of greenschist (map no. 95, sample 10850) and greenstone (map no. 99, sample 10857) were collected, but no significant anomalies were noted. A representative chip sample of a quartz vein with pyrite and chalcopyrite (map no. 95, sample 10851) that contained 21 ppb gold and 82 ppm arsenic.

Galena Creek is an eastern tributary of Wild River, named for a piece of galena found in its bed by early prospectors. The steep gradient deterred early prospectors; however, it heads into a reportedly highly mineralized zone - formerly called Galena Mountain (Reed, 1938). A select float sample of vein quartz with galena, chalcopyrite, pyrrhotite, arsenopyrite contained 1545 ppm lead and 670 ppm zinc (map no. 103). Stream sediment and pan concentrate samples from the same site contained 165 ppm and 122 ppm zinc, respectively.

Approximately 2.5 miles upstream from the mouth of Michigan Creek is the Silver King Mine, from which there has been no recorded production. A caved adit and two cabin-tent sites are still visible. Mineralization consists of quartz veins containing galena, chalcopyrite, silver, lead, and gold (Schrader, 1904, pp. 105; Berg and Cobb, 1967; Nokleberg and others, 1987). No quartz was found in outcrop, but samples from limonite-stained quartz boulders in the creek 300 feet upstream from the adit contained up to 2.63 oz/ton silver, 4.35% lead, and 118 ppm antimony (map no. 104, sample 8009). Quartz veins cutting the southern canyon wall about 0.5 miles upstream from the Silver King Mine site were observed from the air, but not examined.

Mascot Creek

Mascot Creek (Figure 7) proved to be one of the most profitable placer streams in the Koyukuk as the gold lay on bedrock with only a thin cover of overburden, ranging from a few inches to 3 feet thick (Maddren, 1913, pp. 108-09; Reed, 1938, pp. 82-87). Bedrock consists of quartz-mica schist, graphitic schist, phyllite, siliceous mudstone, and schistose quartzite. Boulders of greenstone agglomerate(?) and granitic rock were occasionally observed. The creek, which was last mined on a large scale in the early 1980s, is essentially worked out except for a few small, though potentially high-grade pockets. These pockets are mostly buried under colluvium resulting from the numerous slumps that have occurred along the steep unstable canyon walls. In 1997 a recent cut was examined which had exposed bedrock through 5-6 feet of overburden on the west side of the creek. A placer sample taken from a six-inch thick zone consisting of clay-rich colluvium and underlying tan-weathering muscovite schist in the bottom of the cut contained 1.08 oz/cyd gold (Figure 7, map no. 130). The gold is both rounded and angular and some pieces have limonite or manganese oxide coatings. The site contained only a few yards of this rich material which on a return trip in 1998 was found to be mined out.

There is evidence of considerable prospecting with hand tools for similar occurrences along both sides of Mascot Creek. Most of this prospecting is concentrated along a 0.5 mile stretch about 3 miles upstream from the mouth of Mascot Creek. These sites do not contain enough pay to interest a large operator, but could be profitable for mining at a small scale using mostly hand methods. In most cases a minimum of 5-6 feet of overburden has to be removed to get to the pay layer.

Pan concentrate samples were taken from the major side streams flowing into Mascot Creek and analyzed for gold. The highest value (425 ppm gold) was from No. 1 Pup (Figure 7, map no. 129). A value of 7364 ppb gold was obtained from a western tributary near the stream's headwaters (Figure 7, map no. 125). A value of 3831 ppb gold was obtained from Knorr Creek (Figure 7, map no. 139). Minor galena was found in massive quartz and associated with quartz fillings in brecciated mudstone at the mouth of Discovery Pup (Figure 7, map no. 131, sample 10673). Galena was also noted in a medium grained granitic stream cobble (Figure 7, map no. 133) collected 0.5 miles downstream from this site contained 2315 ppm lead. This rock type was not observed in place along the creek. Micaceous quartzite float located in the stream bottom adjacent to an abandoned mining camp 2.5 miles above the mouth of Mascot Creek contained pyrite and

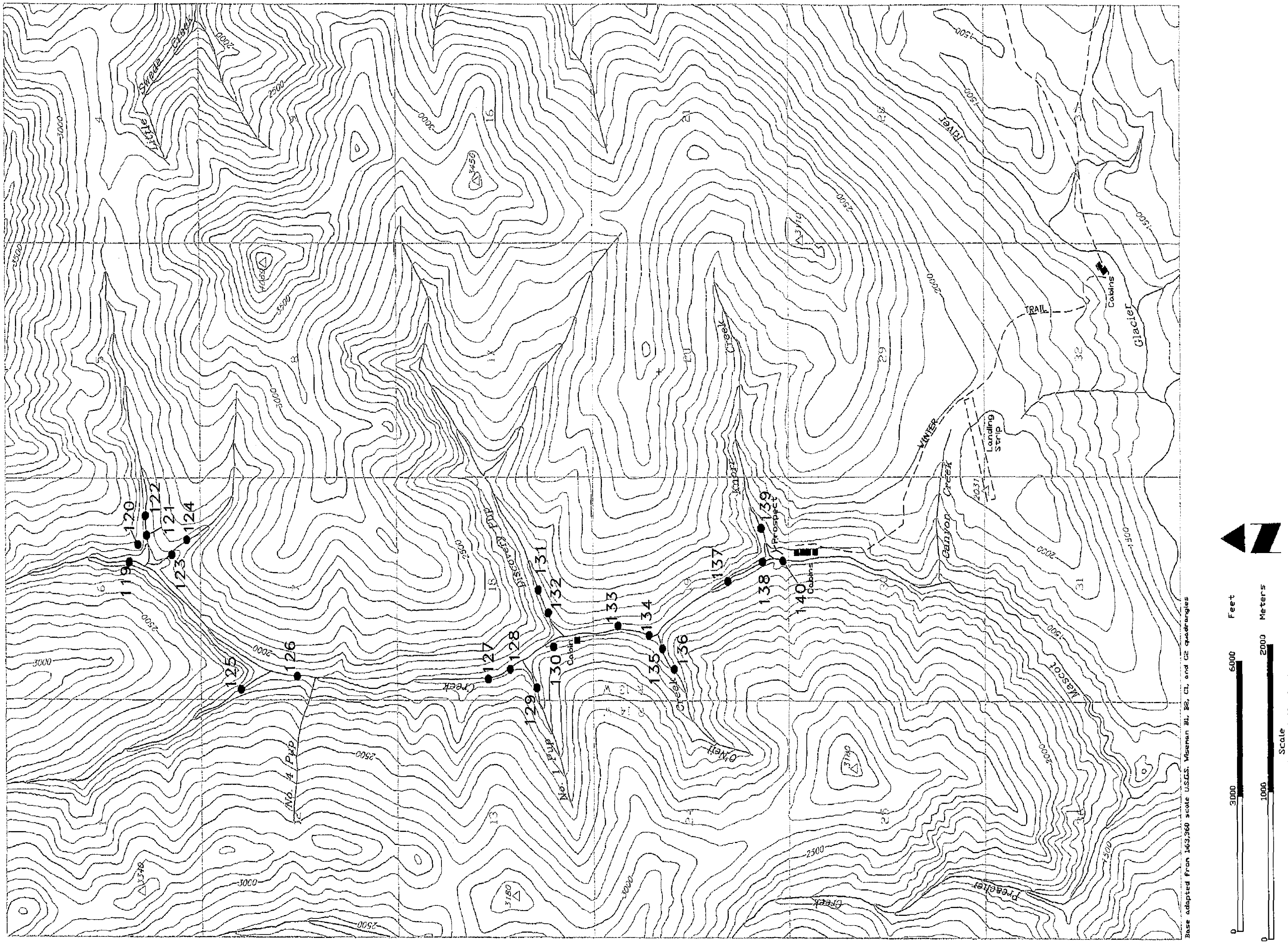

Figure 7. -- Sample location map of the Mascot Creek area, Koyukuk mining district, Alaska.

arsenopyrite in bands up to four millimeters wide. Samples contained up to 3130 ppm arsenic and 32 ppb gold (Figure 7, map no. 140, sample 8018). The source of the quartzite was not located.

Nolan Creek--Hammond River

The majority of the placer gold produced in the Koyukuk district has been mined in the Nolan Creek-Hammond River area (Figure 8). Bedrock in the area consists of phyllite and schist with minor amounts of greenstone. The metasedimentary rocks contain concentrations of euhedral pyrite in layers which are probably formed during the lithification of the sediments. Additionally the metasediments contain lenses of metamorphic quartz and are crosscut by two generations of gold-bearing quartz veinlets (Maddren, 1913; Reed, 1938; Brosge and Reiser, 1972; Proffett,1982; Driscoll, 1987).

In an effort to determine possible bedrock sources of gold, sampling was done of the veinlets and the pyrite-bearing bedrock throughout the area. The highest value obtained from bedrock was 73 ppb gold in a pyrite-bearing micaceous schist (Figure 8, map no. 160, sample 11175) on the Right Fork of Vermont Creek. A sample of pyrite-bearing chloritic schist in Thompson Pup (Figure 8, map no. 208, sample 11214) contained 65 ppb gold. Both samples were collected from bedrock in creek bottoms that had been mined, introducing the possibility of contamination by placer gold. A sample of pyrite-bearing phyllite (Figure 8, map no. 163) which makes up the bedrock crosscut by gold-bearing quartz veinlets near Friday the 13th Pup contained 38 ppb gold. Excluding samples possibly contaminated by placer gold, values for the pyrite-bearing schist and phyllite averaged 12 ppb gold. The average crustal abundance of gold is between 4 and 5 ppb (Levinson, 1974, p. 43).

Pyrite cubes in placer concentrates from the Nolan Creek-Hammond River area (Figure 8, map no. 177, sample 10674) were cleaned and analyzed for gold. The highest value obtained was 79 ppb gold (10675) from the Nolan Creek area. Arsenopyrite crystals from concentrates obtained in Thompson Pup were also analyzed and contained 1964 ppb gold (Figure 8, map no. 216, 10676). These results indicate that arsenopyrite contains more gold than the pyrite; however, the possibility of contamination exists due to association by the sulfides with placer gold in the concentrates.

Anomalous lode gold values are concentrated in two different sets of veins. Stibnite-bearing quartz veins near the mouth of Smith Creek (Figure 8, map nos. 178-184) are anomalous in gold. The veinlets average less than 1 inch wide, commonly extend for only a few feet along strike, and can occur in parallel sets a few feet apart. The average veinlet orientation is N. 55° E. with near-vertical dip. The veinlets are best exposed on the north side of Smith Creek near its mouth where placer mining has uncovered bedrock. Thirteen samples of stibnite-bearing veinlets from that area averaged 2.9 ppm gold. The highest value obtained was 12.2 ppm gold (Figure 8, map no. 178, sample 10747). Samples contained up to 66.4% antimony (Figure 8, map no. 180) and 5772 ppm arsenic (Figure 8, map no. 184, sample 11165). Veins up to 6 inches wide and exposed for 100 feet along strike have been reported in the Smith Creek area. About 6 tons of hand-picked antimony ore was mined from these veins in 1942 (Joestring, 1943; Ebbley and Wright, 1948).

Another concentration of gold-bearing quartz veinlets occurs along the Right Fork of Vermont Creek with the majority concentrated near Friday the 13th Pup (Figure 8, map nos. 162-167) (Figure 9). The veinlets appear to fill a fracture set which cuts phyllite. The veinlets average 0.5 inches wide with a general orientation of N. 60° W. and an average dip of 75° SW. The veinlets are randomly spaced across bedrock bluff faces exposed a short distance south of Friday the 13th Pup. A 100 foot-wide exposure of phyllite in

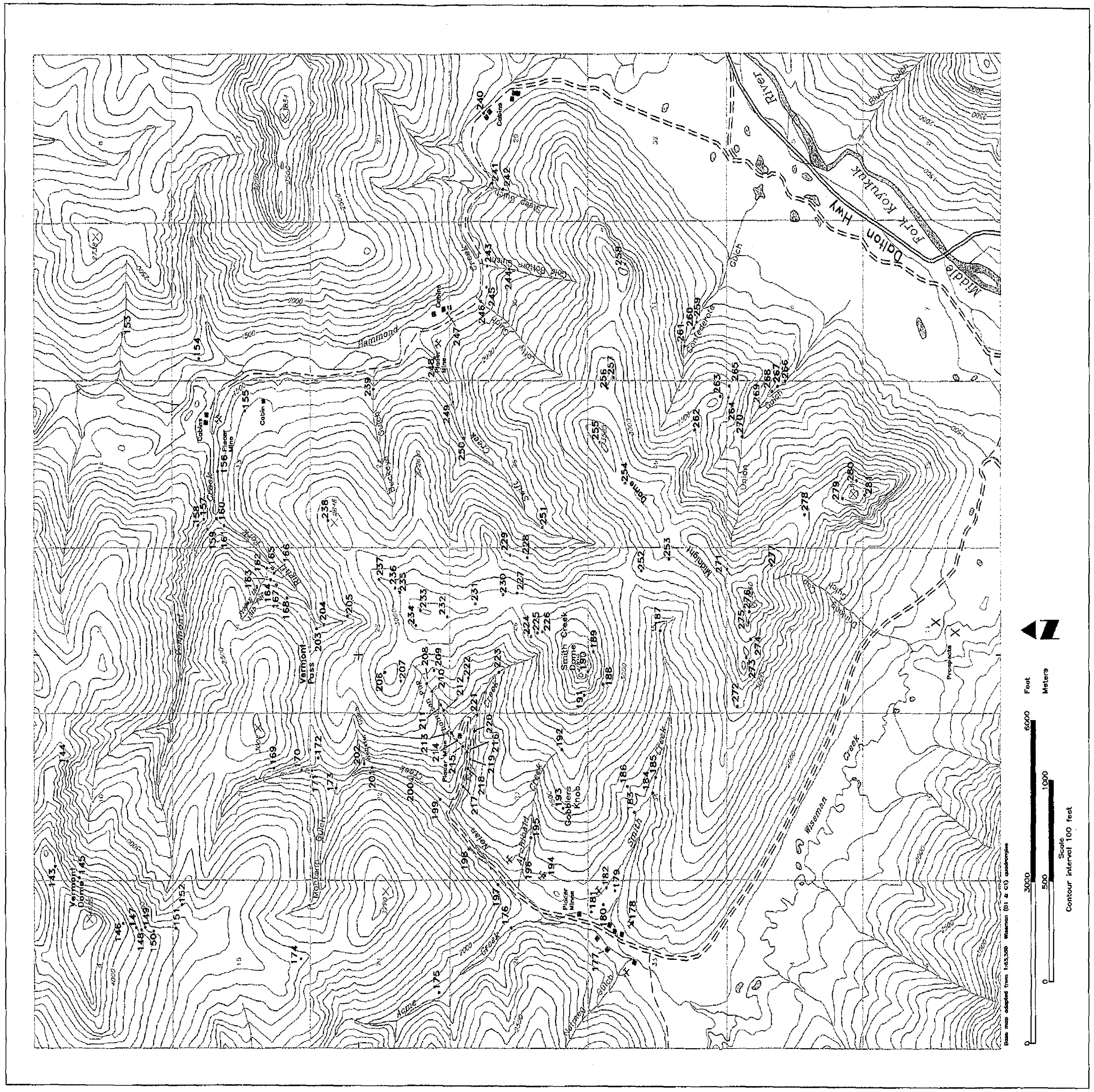

Figure 8. -- Sample location map of the Nolan Creek and Hammond River area, Koyukuk mining district, Alaska

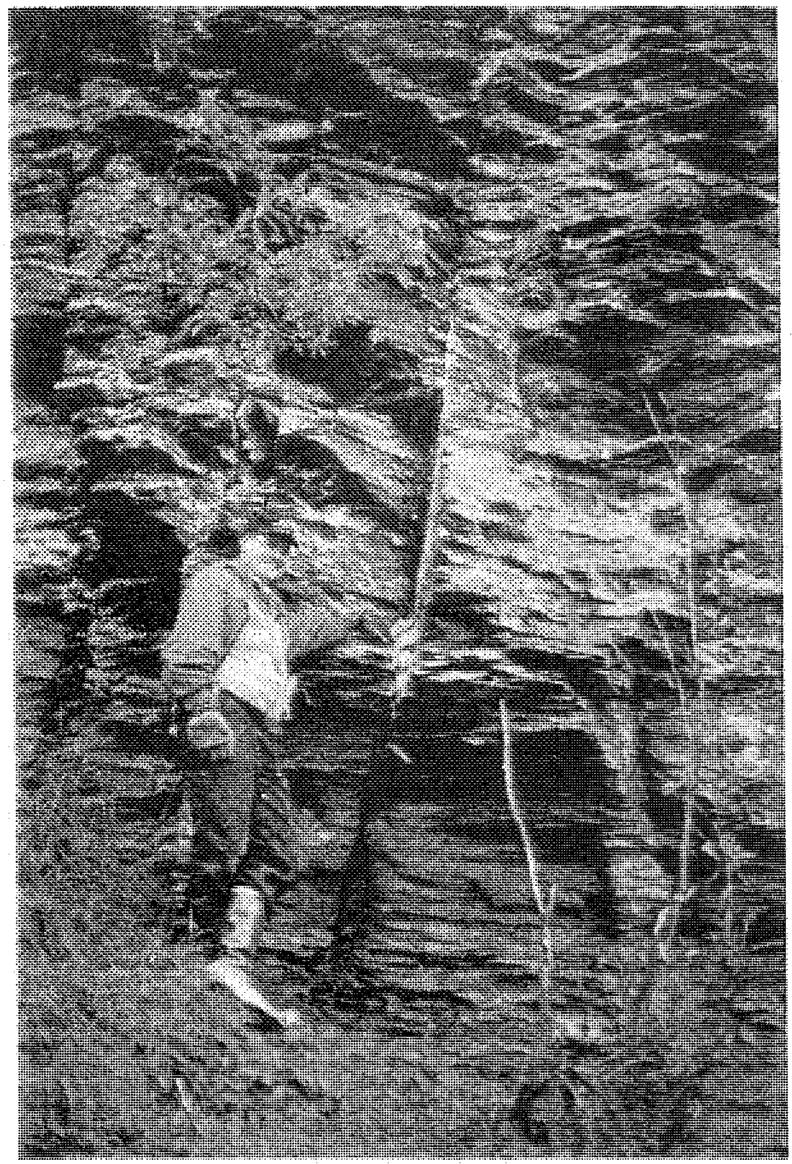

Figure 9 Gold-bearing quartz veinlets in phyllite on Vermont Creek. Samples of the veinlets contained up to 63.6 ppm gold.

this area contained 18 quartz veinlets. Samples from individual veinlets contain up to 63.6 ppm gold (map no. 164, sample 10730). Visible gold was observed in one veinlet, a sample from which contained 17.8 ppm gold (Figure 8, map no. 167, sample 11266). A composite sample from three veinlets (Figure 8, map no. 164, sample 10727) contained 1.8 ppm gold. The veinlets also contain 1-2% pyrite along with trace arsenopyrite and stibnite. Samples averaged 260 ppm arsenic and 160 ppm antimony. When compared to the Smith Creek veinlets, these veinlets contain higher gold values, have a northwest as opposed to a northeast orientation, and contain only minor amounts of antimony and arsenic. Differences in composition and orientation would indicate separate sources and emplacement history for the veins.

Through a cooperative effort with Silverado Gold Mines Inc. in 1998, the BLM supported a geology graduate student (Karsten Eden) who mapped the geology of the Nolan-Hammond River area and is working to develop emplacement models for the veins. The results of this work will be completed as a thesis in fulfillment of a master's degree in economic geology from the Technical University of Clausthal in Germany.

A geochemical survey consisting of pan concentrate and stream sediment samples was carried out to delineate areas in the Nolan Creek-Hammond River vicinity that might be anomalous in gold. Pan concentrates proved the best indicator of gold and were relied on for interpretation. Excluding sites where mining had previously taken place, anomalies concentrated in two areas. The first occurs on the northeast and southeast flanks of Midnight Dome. In this area, Lofty (Figure 8, map no. 246), Gold Bottom (Figure 8, map no. 244), Steep (Figure 8, map no. 242), and upper Union Gulches (Figure 8, map no. 270) are all anomalous in gold. The highest value (13.3 ppm) was obtained from Lofty Gulch. The upper portions of these drainages have not been mined as they are narrow, have steep gradients, and contain only small amounts of potentially gold-bearing gravel. A select sample of a quartz vein on the ridge above Gold Bottom Gulch (Figure 8, map no. 258) contained 810 ppb gold.

A second area which drains the west and east flanks of hill 3008 between upper Nolan Creek and the Right Fork of Vermont Creek was also anomalous in gold. A pan concentrate from Friday the 13th Pup (Figure 8, map no. 165) contained 1750 ppb gold. This pup drains an area where previously-mentioned gold-bearing quartz veinlets occur. A sample from upper Vermont Creek (Figure 8, map no. 159) contained 398 ppb gold. A sample from upper Nolan Creek (Figure 8, map no. 171) contained 15 ppm gold. The rocks underlying hill 3008 may contain a high concentration of gold-bearing quartz veinlets or there may be gold-bearing bench gravels on the hill. The erosion of either source could be producing the fine gold in the creeks.

An investigation was made of gold-bearing gravel terraces on the east side of the Hammond River above Vermont Creek (Figure 10). The terraces are the remnants of an ancestral flood plain created by the Hammond River when it flowed at a base level 300-400 feet higher than at present. Such a rise in base level may have resulted from damming of the Hammond River valley by glacial ice advancing down the Middle Fork of the Koyukuk River.

Samples were collected from the south wall of a gully dissecting a terrace and exposing a 90 foot thickness of gravel resting on phyllite bedrock. A placer sample (Figure 8, map no. 153, sample 11277) collected from shallow pits at approximately 20 foot intervals up the gully wall contained 0.0008 oz/cyd gold. Another placer sample (11278) collected from a single pit 150 feet upstream and on the same side of the gully contained a high percentage of colluvial material and no weighable gold. A third placer sample (11279) made up of gravel and underlying bedrock contained 0.006 oz/cyd gold. The gold in the samples

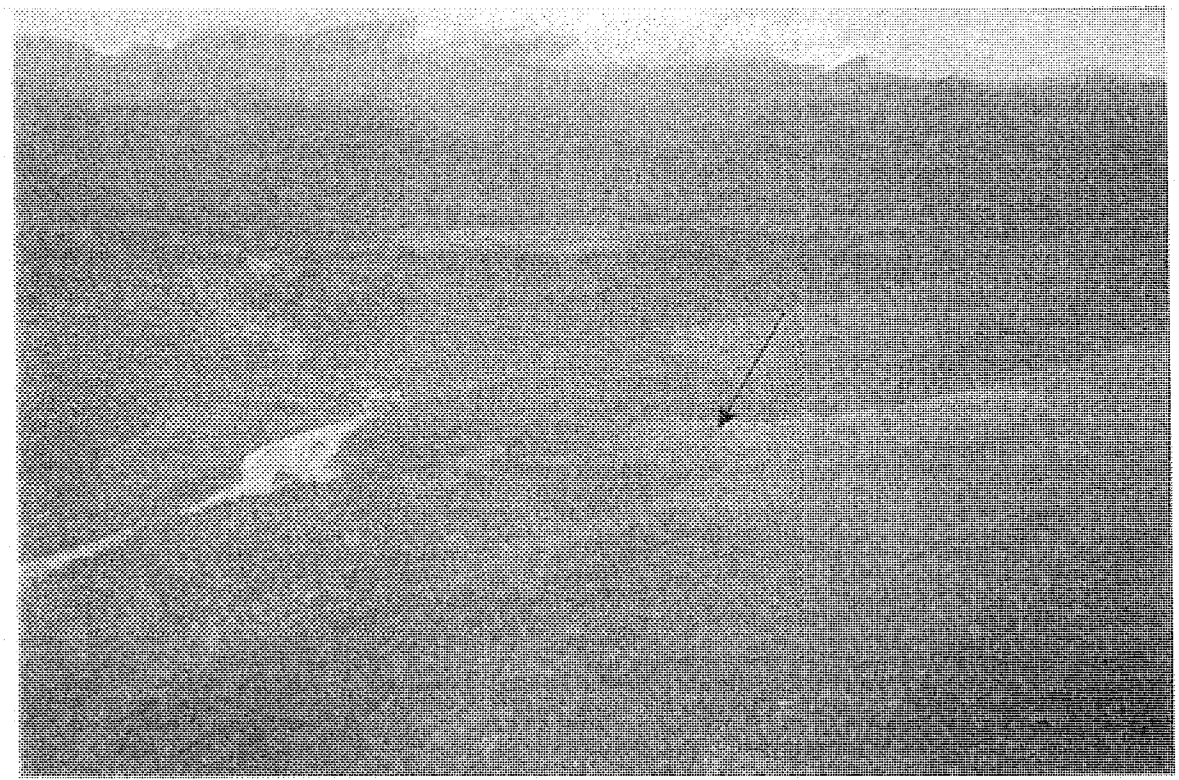

Figure 10 Looking north at gold-bearing terrace gravels on east side of the Hammond River above Vermont Creek. Placer samples from one site contained up to 0.006 oz/cyd gold.

was mostly bright and nuggety in character. These results indicate that gold occurs throughout the gravel, but that the highest values are concentrated on bedrock. More sampling is warranted and should focus on bedrock and the gravel lying just above it.

As part of an effort to verify reports that gold has been panned from the soils on Smith Creek Dome, a 0.03 cubic yard sample of soil was collected from the west slope of the dome (Figure 8, map no. 193). It was concentrated using a processing plant that had been previously used to run gold-bearing samples from drilling projects in the area. Analysis showed the final concentrate to contain 388 ppm gold. To verify the first sample, a 0.02 cubic yard sample (Figure 8, map no. 192) was collected 1800 feet to the east and processed through a BLM sluice box. It contained no visible gold or black sand and analysis showed it to contain 2.3 ppm gold. The latter value is considerably less than the first sample, but still considered to be significant. It is suspected that the test plant used for the first sample may have been contaminated with gold from previous tests. It is recommended that additional large soil samples should be collected in the area for further confirmation.

Bettles River and Robert Creek

Bettles River and Robert Creek lie at the headwaters of the Middle Fork Koyukuk River. The Skajit Limestone is the predominant bedrock unit and is intruded by a Devonian granitic pluton. Porphyry, skarn, and massive sulfide prospects occur along a northeastern trend called the Chandalar Copper Belt (Figure 11). Placer gold has been mined on several tributaries.

The Luna prospect lies near the headwaters of Robert Creek. Massive sulfides are reportedly hosted in quartz-sericite schist, calcareous-quartz-(sericite) schist (WGM, 1979d), and calc-silicate rocks (WGM, 1983). Three select float samples (map no. 291) were anomalous in gold, copper, and zinc. The highest values were obtained from a select float sample of quartz-sericite schist (10700) containing 1129 ppb gold, 98.4 ppm silver, 10.2% copper, and 8447 ppm zinc.

The genesis of the massive sulfides at Luna is a source of debate. Nicholson (1990) cites the presence of strataform massive sulfide layers, high sulfur isotopic ratios, and the spatial association between stringer mineralization, chloritic, and silicic alteration as evidence of volcanogenic massive sulfide style mineralization. The Luna prospect most likely represents one or more of the following: **1**) original volcanogenic massive sulfide; **2**) skarn-altered metavolcanic rocks and volcanogenic massive sulfide; or **3**) skarn-altered calcareous and metasedimentary rocks (Central Alaska Gold Co., 1992).

The Ginger prospect (map nos. 294-297) lies 3.5 miles southwest of Luna and contains small, isolated skarn outcrops. A select sample (map no. 296, sample 8041) measuring 2 feet by 6 feet contained 548 ppb gold and 3.61% copper. A calc-silicate rock (map no. 294, sample 11251) collected adjacent to a sericite schist consisted of 1201 ppb gold and 2.8% copper. There are numerous outcrops of sericite schists; however, no sulfide mineralization is associated with this unit at Ginger. A diabase sill containing disseminated pyrrhotite is exposed for 50 feet along strike. The sill was injected within two marble beds and truncated by a vertical fault. A random chip sample (map no 295, sample 11048) contains 5.16% iron and is magnetic. Correlation of this unit to adjacent aero-magnetic anomalies is currently being investigated.

The Evelyn Lee (map nos. 298-299) prospect is located on an eastern tributary of Big Spruce Creek. The prospect is a discontinuous skarn which encircles a hill. On the north side, a representative sample from a

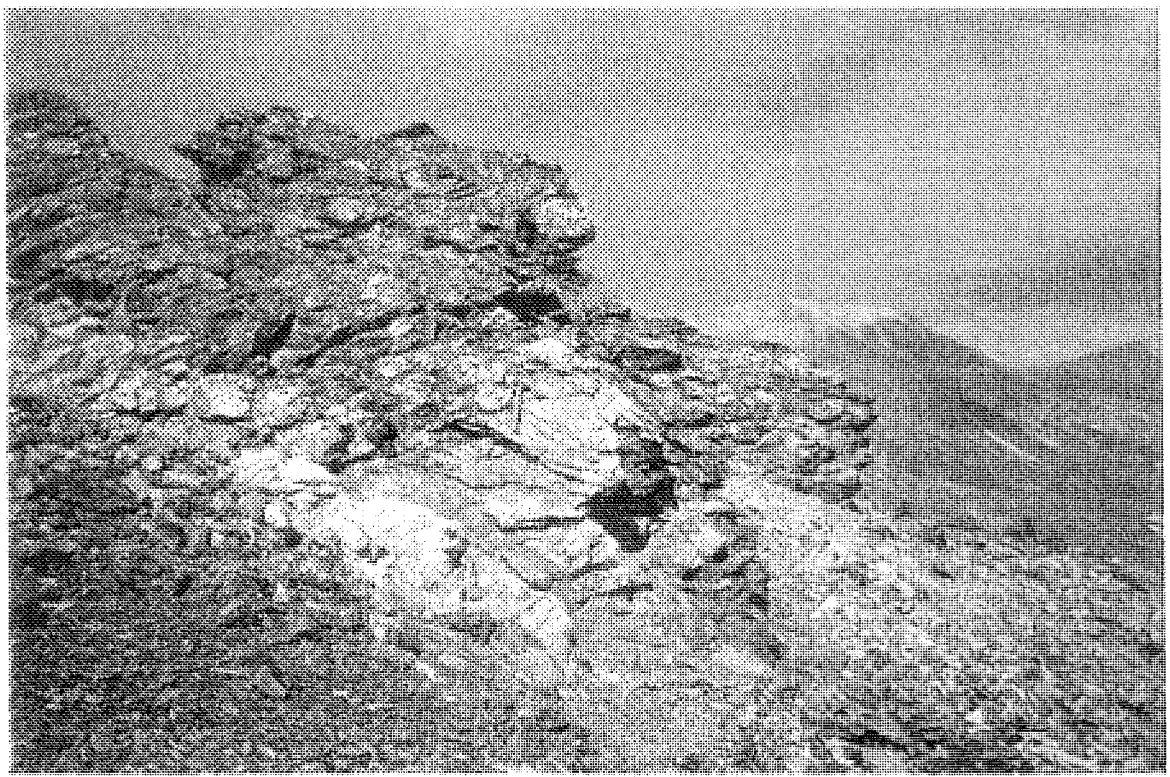

Figure 11 Copper skarn outcrop in the Big Spruce Creek area.

trench (map no. 298, sample 11107) contained 7.0% copper and 82 ppb gold. Surficial copper staining is prolific on the southwest side of the hill; however, much of it has leached from small, mineralized pods and precipitated onto barren marble due to pH changes. A select sample of skarn rock collected from a fault surface (map no. 299, sample 11046) contained 1896 ppb gold and 3.5% copper.

Samples were collected from skarn on the ridge between Mathews River and Big Spruce Creek near Peak 4737 (map nos. 301-302). There were six 1-foot-wide sulfide-rich pods concentrated within a 150- by 30-foot skarn exposure. A 1.0 foot-wide continuous chip sample (map no. 302, sample 11186) of a quartz-epidote-garnet skarn pod contained 321 ppb gold and 1.22% copper.

The Venus prospect (map nos. 302-310) is located on Big Spruce Creek, approximately 6 miles east of Wiehl Mountain. A granite porphyry with disseminated pyrite and chalcopyrite outcrops on both sides of the creek (and unnamed tributary) for approximately 1 mile. A grab sample of the granite (map no. 308, sample 11180) contained 14 ppb gold and 1382 ppm copper.

Several skarns and massive sulfides adjacent to the granite outcrops were sampled. At Peak 5274, upslope from Venus, a select rubblecrop sample (map no. 305, sample 8030) of a skarn contained 1020 ppb gold, 7.76% copper, 555 ppm arsenic. Skarn outcrops and boulders containing massive magnetite, pyrite, chalcopyrite, and pyrrhotite are also found on the unnamed tributary at Venus. A random chip sample of a massive sulfide skarn outcrop (map no. 308, sample 11181) contained 39 ppb gold, 0.17% copper, and 32.14% iron.

Samples of skarn exceeding 1000 ppb gold were found at Venus, Evelyn Lee, Ginger, and Luna prospects. Unfortunately, the auriferous skarns do not have identifiable common characteristics. There is no consistent antimony or arsenic anomalies or mineral associations correlated with the auriferous samples. All four samples did contain elevated amounts of copper - ranging from 2.8% to 10.2%.

Historically, placer operations have operated on Bettles River, Robert Creek, and many of the tributaries. Reconnaissance samples were collected on Emery, Garnet, Eightmile, Limestone, Mule, and Phoebe Creeks. Evidence of previous placer mining operations was visible on all creeks. Visible gold was found in an concentrate samples at Sheep Creek (map no. 311), Bettles River (map no. 318), and Mule Creek (map no. 321); however, the gold was limited to a few very fine grains.

Sukakpak Mountain

On the south side of Sukakpak Mountain (map nos. 329-330) stibnite and gold-bearing quartz veins are concentrated along the faulted contact between Devonian and Silurian(?) limestone, and Ordovician to Cambrian(?) schist and quartzite. The largest vein is up to 4 feet wide and extends 380 feet along a N. 56° E. trend. Eleven samples collected at varying intervals along the strike length by previous investigators averaged 15.6 ppm gold and 19.0% antimony (Dillon, 1982; Huber, 1988; Dillon and Reifenstuhl, 1995). Vein width at the sample sites is unknown. Two continuous chip samples (map no. 329, samples 11049 and 11111) averaged 15.4 ppm gold across an average 2.8 foot vein width. Select samples of massive stibnite float contained up to 47.3 ppm gold (11112). The site is within the inner Pipeline Corridor and withdrawn from mineral entry. Northwest-trending faults which form a graben on Wiehl Mountain, 4.5 miles east of Sukakpak Mountain are reported to contain stibnite-bearing quartz veinlets (Huber, 1988, p. 31). An aerial reconnaissance was made of the area, but no obvious quartz veining was spotted. Nonetheless a ground traverse is recommended along the ridge running south from the summit of the

Bob Johnson (Big) Lake

Four sites in the Bob Johnson Lake (Big Lake on some maps) area reported to contain placer gold were examined. Lake Creek (map nos. 344-345) at the northwest end of the lake contained the highest gold values. A placer sample (map no. 345, sample 11270) taken from 6 inches of gravel and 4 inches of underlying bedrock contained 0.067 oz/cyd gold. At this site an approximately 500-foot-long stretch of the creek has been mined extensively with hydraulic and hand methods. It is estimated that only about 5 cubic yards of gravel similar to that from which the sample was collected remain. Bedrock consists mainly of muscovite-chlorite-quartz-schist with interlayered black, pyrite-bearing phyllite. Samples of the phyllite (map no. 345, sample 11269) contained up to 9 ppb gold and 37 ppm arsenic. A pan concentrate sample from Holy Moses Creek (map no. 346) on the southwest side of the lake contained 193 ppb gold. Samples from Shamrock and Billy Glenn Creeks were not anomalous in gold.

Middle Fork Koyukuk River - Coldfoot Area

The Middle Fork Koyukuk River bisects several geologic terranes of the Brooks Range. The portion south of Twelvemile and Cathedral Mountains consists of the Angayucham terrane. The Angayucham fault system trends east-west and provides a 3 mile wide transition zone between the Angayucham terrane and the Arctic Alaska terrane, which makes up most of the Brooks Range.

Sampling along the Middle Fork consisted mostly of reconnaissance placer investigations along prominent Middle Fork tributaries. Visible gold was found on 7 of 11 tributaries visited. A pan concentrate sample from Minnie Creek (map no. 355, sample 11292) contained 6899 ppb gold. At Marion Creek (map no. 361), a placer sample contained 0.006 oz/cyd of gold. A pan concentrate sample at tributary to Clara Creek (map no. 365) contained 199 ppm gold. At Myrtle Creek, a pan concentrate sample (map no. 366) collected three miles upstream of the mouth contained 9790 ppb gold. A pan sample collected from bedrock on Porcupine Creek (map no. 367, sample 11324) contained 27 ppm gold. Pan concentrate samples at Rosie (map no. 368) and Twelvemile (map no. 369) Creeks produced 2668 ppb and 171 ppm gold, respectively.

Iron sulfides, most often in the form of disseminated pyrite and pyrrhotite, were found in select rock samples on several Middle Fork tributaries (Minnie, Marion, Myrtle, and Porcupine Creeks). At Myrtle Creek, a float sample of biotite quartz schist with approximately 20% euhedral pyrite contained 23 ppb gold (map no. 366, sample 11313). Also, a select outcrop sample of quartz mica schist with approximately 10% euhedral pyrite from Porcupine Creek contained 33 ppb gold (map no. 367, sample 11322).

Tramway Bar Coal

Upper Cretaceous sediments in the upper reaches of the Koyukuk basin contain isolated exposures of coal. This coal was historically used on a limited basis by local miners for blacksmithing purposes. Two exposures located on the west side of the Middle Fork of the Koyukuk River upriver from Tramway Bar were sampled during the present study (map nos. 370-371) (Schrader, 1900, p. 485; Collier, 1903, pp. 48-49; Rao, 1980).

At a site 2.3 miles above Tramway Bar (map no. 370) and on the west side of the river an 11.2 foot-thick coal-bearing section interbedded with sandstone is exposed for about 500 feet along strike and dips 30° into the river bluff. The lower 7.1 feet of the bed is lignitic coal and the upper 4.1 feet is bituminous coal with clay partings up to 0.3 feet thick. The bituminous portion of the bed was sampled and analyzed. An "as received" analysis showed the coal showed it to have the following: 7.11% moisture content, 26.86% ash, 30.02% volatiles, 36.01% fixed carbon, 0.21% sulfur, and 8460 Btu/lb.

At a second site 1.5 miles above Tramway Bar (map no. 371) and on the same side of the river, two vertical bituminous coal-bearing beds 6.0 and 10.8 feet thick, separated by 3.5 feet of clay were sampled. The averaged "as received" results of the two samples are the following: 10% moisture content, 27.99% ash, 27.57% volatiles, 34.45% fixed carbon, 0.23% sulfur, and 7823 Btu/lb.

When averaged, the analytical results from the two sites indicate an "apparent" ranking of 11,570. According to the American Society for Testing and Materials specification (ASTM-D-388-66), the Tramway Bar coal is bituminous in quality. The low sulfur content is typical of Alaskan coals, but the high ash content places it in the unclean category.

South Fork Koyukuk River

The South Fork Koyukuk River bisects the Ruby and Angayucham terranes. The Ruby terrane is comprised of Proterozoic to lower Paleozoic continentally associated metasedimentary rocks and protoliths. The Angayucham terrane is derived from oceanic crust and contains diabase, pillow basalt, chert, and graywacke. Mid-Cretaceous granitic plutons and batholiths intrude both terranes, providing an upper time limit for the thrusting of the Angayucham over the Ruby (Dillon, 1989).

The area contains numerous placer prospects and a tungsten-bearing skarn prospect. Reconnaissance stream sediment and pan concentrate samples were collected on Bonanza Creek, Prospect Creek, Douglas Creek, and Jim River. The Bonanza Creek tungsten skarn was also investigated.

Placer gold was found in broken bedrock in the Jim River canyon (map no. 376) and in gravel four miles upstream of the canyon (map no. 375). The two pan concentrate samples revealed visible fine gold and contained 1231 ppb and 1590 ppb gold, respectively. Bedrock at the canyon site consisted of interlayered chert and serpentized greenstone, locally containing pillows. A malachite-stained piece of greenstone(?) float was found in the riverbed nearby. A placer sample collected at the upstream location yielded only 0.0003 oz/cyd gold. It is suspected the anomalies represent fine or 'flood gold' associated with the Jim River pluton which outcrops north of the canyon for approximately 20 miles. Because of its proximity to the Haul Road, the Jim River warrants further investigation as a potential recreational panning area.

The skarn prospect is located in the southern headwaters of Bonanza Creek (map no. 379). Tungsten anomalies were first detected in 1976 during a regional geochemical stream sediment sampling program conducted by B.P. Alaska Exploration Inc. (Clautice, 1987). The prospect is immediately north of the Kanuti Pluton, where lower Paleozoic (and older?) metasediments contact a granitic pluton of varied texture. The metasediments contain pelitic and calcareous schists, minor greenstone, and isolated marble pods. The marble pods occur as discontinuous beds and pods up to 50 feet thick and 200 feet long (Clautice, 1987).

A series of trenches were located on the southeast side of a small knob (Windy Knoll) on the north side of Bonanza Creek. The trenches expose dark green pyroxene skarn rubblecrop across a 1400 foot distance. The skarn was locally limonite-stained and contained coarse scheelite grains up to 1/8-inch in size, up to 10% pyrrhotite, and trace chalcopyrite. A select sample (10987) contained 1.44% tungsten, 1438 ppm zinc, and 12 ppb gold. Exposures of the skarn are poor, but indicate that the extent of the mineralization is limited.

Lake Todatonten

A mineral resource investigation was made of the Lake Todatonten area (Figure 12) prior to its addition to the Kanuti Wildlife Refuge and subsequent withdrawal from mineral entry. The terrain surrounding the lake consists of low, tree and tundra-covered hills with the only rock exposures being occasional float on the ridgetops. The area is underlain by sedimentary rocks, consisting of Late Cretaceous interbedded graywacke and mudstone of unknown orientation and thickness. Stream sediment and pan concentrate samples were collected from drainages surrounding the lake where silt and gravel could be obtained. In addition traverses were made along ridgetops and rock and soil samples collected where obtainable through the lichen cover. One pan concentrate collected from a stream on the southeast side of the lake (Figure 12, map no. 401, sample 10556) was anomalous in gold (397 ppb). A resample of the same stream gave a value of only 5 ppb gold (10946). The rest of the samples collected were not anomalous in any metals. These results indicate that the area has low mineral resource potential. In December, 1998 a public land order (PLO 7372) was issued which created a Special Management Area (SMA) of a 37,359-acre parcel of land surrounding Lake Todatonten, withdrawing it from mineral entry.

Indian River

The headwaters of the Indian River lie just outside the Koyukuk mining district boundary. However the area was investigated as it contains known mineral occurrences and geology similar to that within the district. Igneous rocks near the headwaters of the Indian River consist of Late Cretaceous granodiorite and quartz monzonite and late Jurassic to early Cretaceous andesitic volcanics. The intrusive rocks make up the Indian Mountain pluton which intrudes late Early Cretaceous graywacke and mudstone. The sedimentary rocks are locally metamorphosed along intrusive contacts to resistant dark-brown hornfels (Patton and Miller, 1966). The hornfels contains up to 1 - 2% finely-disseminated pyrite with concentrations highest where felsic dikes related to the pluton intrude the hornfels. The hornfels contain brecciated zones cemented by quartz and is also cut by quartz veinlets. In both cases the quartz contains minor chalcopyrite. Both Indian River and Utopia Creek drain the intrusive-sediment contact and have been extensively mined for placer gold. Small areas of fractured hornfels bedrock and a clay-rich layer lying on top of it near the headwaters of Black Creek (Figure 13) still contain significant amounts of gold. Placer samples taken from the fractured hornfels bedrock to a 6 inch depth contained up to 0.84 oz/cyd gold, 813 ppm arsenic, and >2000 ppm tungsten (Figure 13, map no. 444, samples 10589 and 10638). Individual gold flakes weighing up to 0.01 oz were recovered. A sample of the clay-rich layer and associated colluvium on the right limit of Black Creek contained 0.061 oz/cyd gold (10590). These resources are not large, but could prove economic for a small operator using mostly hand methods.

Rocks at the headwaters of Black Creek were examined to determine possible lode sources for the placer gold. This drainage is small in extent, confining the area where a potential lode gold source might occur (Figure 14). The upper portion of the creek contains interbedded graywacke and mudstone which have been hornfelsed near the intrusive contact. These rocks are locally cut by quartz veinlets and brecciated with quartz cementing the fragments. Some veinlets cut entirely across all previous breccia textures

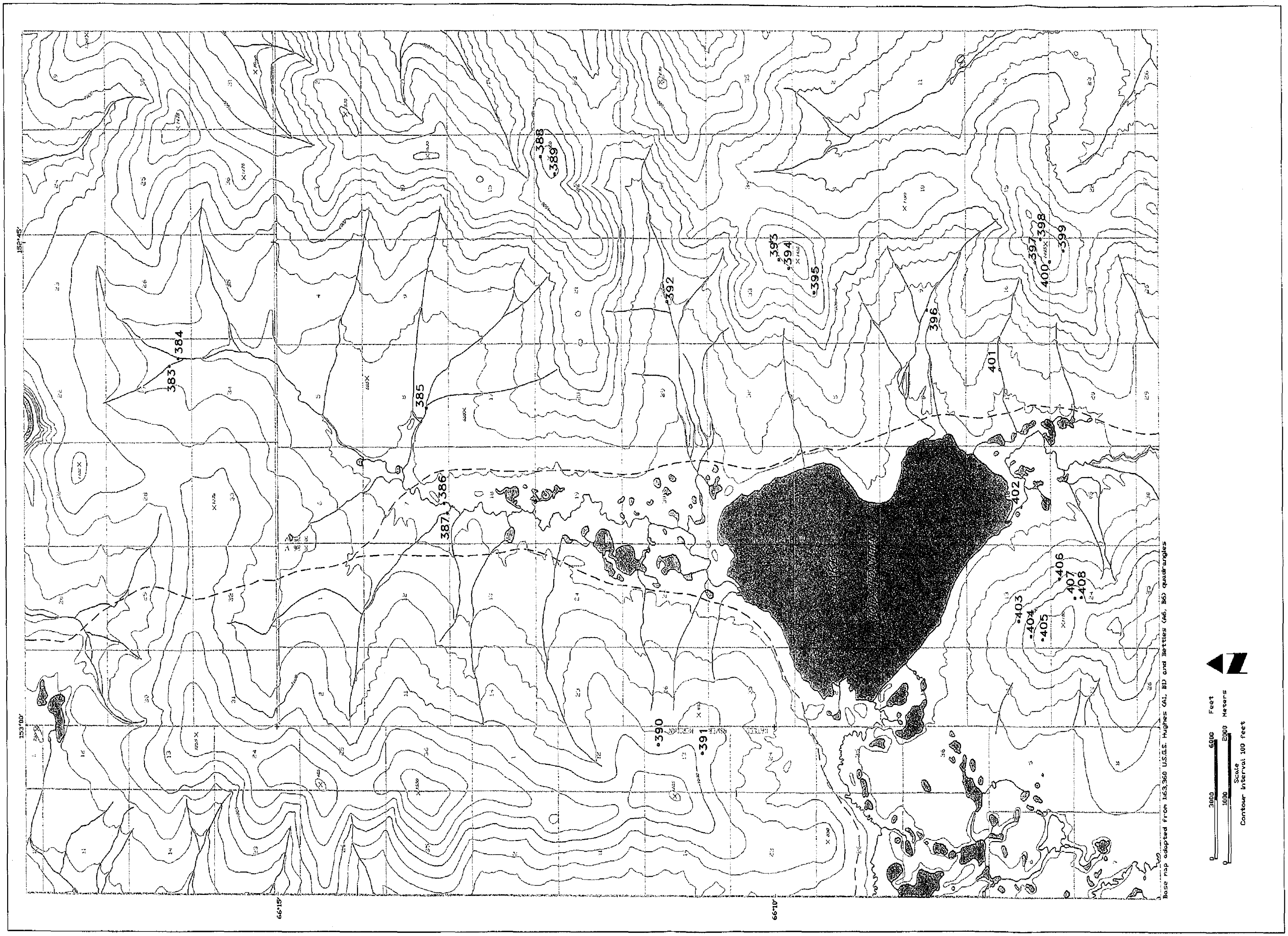

Figure 12. -- Sample location map of the Lake Todatonten area, Koyukuk mining district, Alaska.

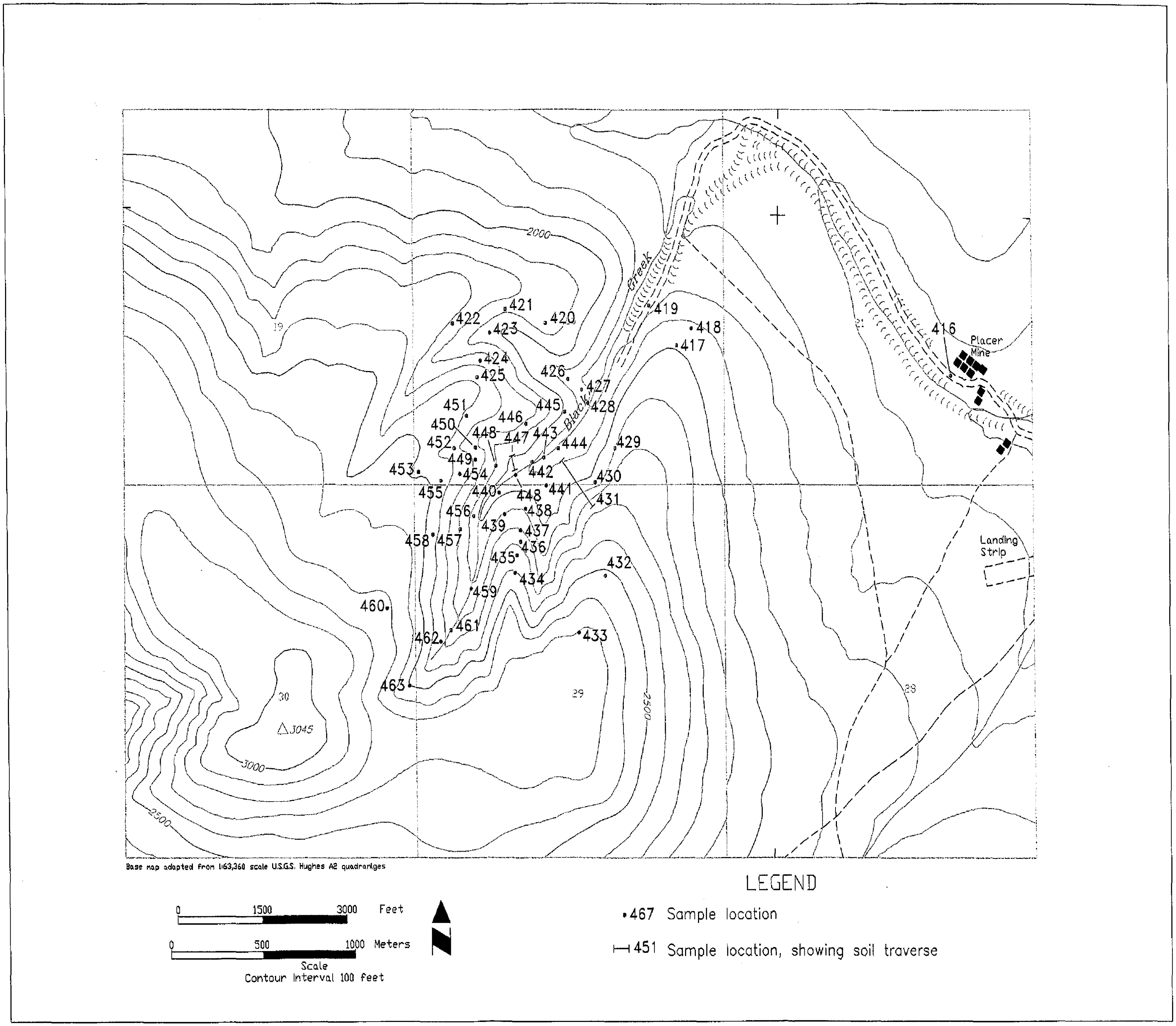

Figure 13. -- Sample location map of the Black Creek area, Koyukuk mining district, Alaska.

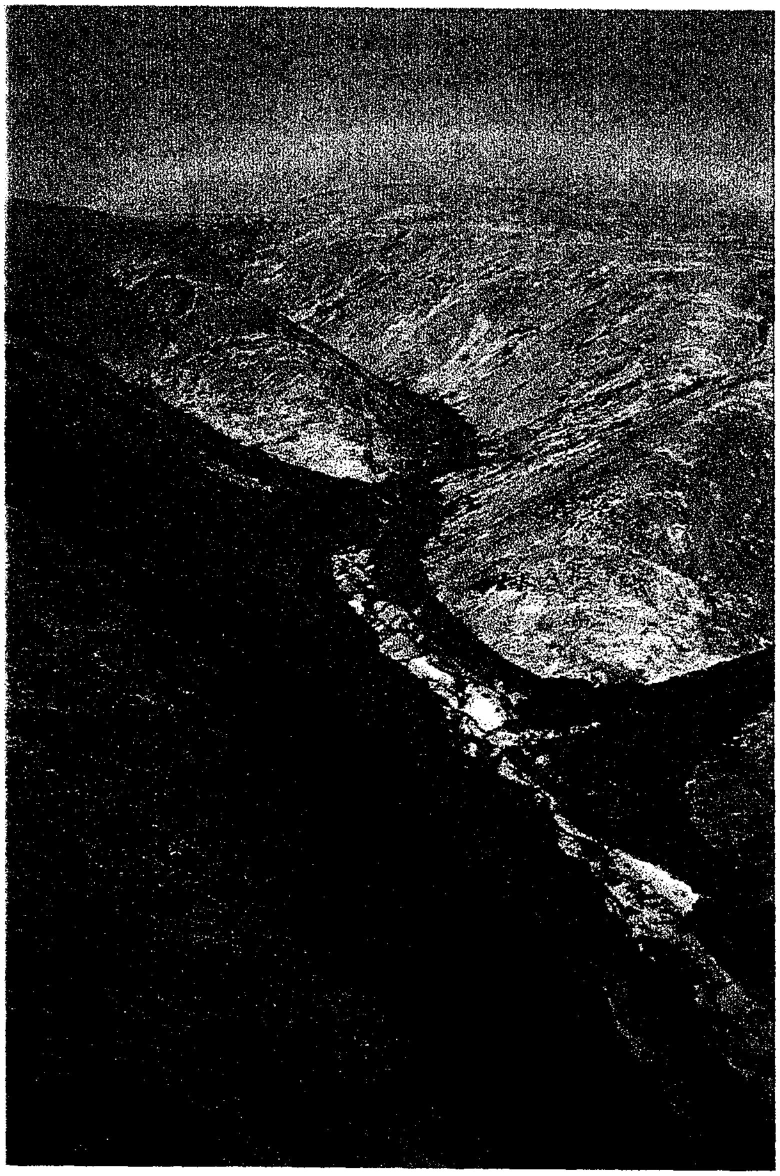

Figure 14 Placer tailings in Black Creek near Indian Mountain. Placer samples from near the forks just above the photo center contained up to 0.84 oz/cyd gold.

indicating more that one period of fracturing. This entire sequence of rocks is cut by a series of northwest-trending faults.

Roughly east-west oriented felsic dikes and a single exposure of what appears to be porphyritic andesite(?) intrude the sediments and hornfels. The hornfels and graywacke contain 1-2% disseminated and stringer pyrrhotite and minor arsenopyrite with the highest concentrations of sulfides indicated by limonite-stained colluvium. Sulfide concentrations are apparently highest near felsic dikes. Minor chalcopyrite occurs as both disseminations and in quartz veinlets. Samples of sulfide-bearing graywacke and graywacke breccia contained up to 611 ppb gold and 3912 ppm copper (Figure 13, map no. 432), 2676 ppm arsenic (Figure 13, map no. 453), and 473 ppm bismuth (Figure 13, map no. 419). Samples of the andesite contained up to 57 ppb gold (Figure 13, map no. 457, sample 10596). Samples of the felsite contained up to 42 ppb gold (Figure 13, map no. 451, sample 10964).

Soil samples were collected at 100-foot intervals for 900 feet up the colluvial slopes on the east side (Figure 13, map no. 431) and 300 feet up the west side (Figure 13, map no. 447) of Black Creek. The highest value obtained was 323 ppb gold from a sample collected on the east side of the creek just above the stream bottom (Figure 13, map no. 431, sample 10972). Pan concentrates were collected from the various branches of the upper part of the creek. The highest value obtained was 36 ppb gold (Figure 13, map no. 426) taken from the farthest side drainage to the west. Extensive hornfels and wide distribution of sulfides along with the presence of felsite dikes indicate that the intrusive-sediment contact may be shallow in this area, dipping at low angle to the south. The rocks at the headwaters of Black Creek could represent a possible cupola overlying an intrusive body.

Investigations were made at a site west of the Indian River (map no. 468) where previous sampling had resulted in anomalous gold values (Miller and Ferrians, 1968, p. 5). A float sample of sulfide-bearing silicified vuggy metarhyolite(?) collected from the site of an old mining road along the west side of Indian River contained 8.3 ppm gold and 11.5 ppm silver (10633). The sample contained disseminated pyrite and a gray metallic mineral which due to the silver and copper content of the rock is possibly tetrahedrite. Anomalous lead and zinc values indicate the presence of galena and sphalerite, but they were not observed. More limonite-stained rocks which occur just east of the site sampled have yet to be investigated.

Intense limonite staining forms a conspicuous 50- by 100-foot color anomaly on the east side of the Indian River 4.5 miles south of Indian Mountain (map no. 469). Float at the site is composed of hydrothermally-altered andesite(?) that has been silicified as represented by numerous quartz veinlets. The rock contains 2-3% pyrite and abundant boxworks and gossaneous textures indicate that the original sulfide content was probably much higher. Samples of quartz-rich float contain up to 593 ppb gold, 21.6 ppm silver, and 692 ppm copper (10511).

SUMMARY

As of 1998 the BLM has examined 175 documented mineral occurrences in an ongoing mineral assessment of the Koyukuk mining district. Significant results from the first two years of study include the delineation of anomalous gold values within volcanic and hornfelsed rocks on the upper Indian River, widespread fine placer gold along Jim River, anomalous placer gold in bench gravels above the Hammond River near Vermont Creek, gold-bearing stibnite-quartz veins on the right fork of Vermont Creek and Smith Creek, and gold anomalies in skarn and massive sulfides north of Bettles River.

Two more field seasons are planned to complete the assessment which includes examination of the remaining 232 documented mineral occurrences, followup of anomalous geochemical samples, and anomalies resulting from an airborne geophysical survey done in the northeast portion of the district. A mine costing study will also be done using the various deposit types occurring in the district as models.

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APPENDIX A - Analytical Procedures

All samples were analyzed by Intertek Testing Services[1] of Vancouver, Canada. Pan concentrate and rock samples were dried and pulverized to minus 150 mesh. Stream sediment and soil samples were dried and sieved through to minus 80 mesh.

Gold was analyzed by a pre-concentration fire assay followed by either an atomic absorption (AA) finish or an induction couple plasma (ICP) atomic emission spectroscopy finish. Platinum and palladium were also analyzed by a pre-concentration fire assay followed by an ICP finish. The detection limits for gold, platinum, and palladium are illustrated on Table 1.

All other elements (except mercury) were digested in a (3:1) HCl-HNO_3 solution. Once in solution, the elements were measured by ICP atomic emission spectroscopy. The analysis for mercury was accomplished with (3:1) HCl-HNO_3 digestion followed by cold vapor measurement. The minimum detection for mercury is 0.010 ppm. The minimum detection for the other elements tested are detailed on Table 2.

Concentrations of gold and silver which exceeded the upper detection limit (>10,000 and >500 ppb, respectively) for the AA finish were re-analyzed by fire assay gravimetric methods. Elevated concentrations of antimony, barium, bismuth, copper, iron, lead, and zinc were re-analyzed by multi acid digestion followed by atomic absorption. Finally, a peroxide sinter preparation and ICP method were used for tungsten anomalies. The detection limits (and methods) for these special re-runs are listed in Table 3.

In 1994, 56 samples were collected during a brief visit to the Koyukuk mining district. They were analyzed by different analytical methods than the 1997-1998 samples. The methods and detection limits for the 1994 samples are presented in Table 4.

[1] Mention of Intertek Testing Services does not signify BLM endorsement.

Table 1. Standard Fire Assay Analysis for Gold, Platinum, and Palladium

Element	Element	Minimum Detection	Finish Method
Au	gold	5 ppb	atomic absorption
	gold	1 ppb	ICP
Pt	platinum	5 ppb	ICP
Pd	palladium	1 ppb	ICP

Table 2. Minimum Detections for ICP - Atomic Emission Analyses (Standard Run)

Element	Element	Minimum Detection	Element	Element	Minimum Detection
Ag	silver	0.2 ppm	Mo	molybdenum	1 ppm
Al	aluminum	0.01 %	Na	sodium	0.01 %
As	arsenic	5 ppm	Nb	niobium	1 ppm
Ba	barium	1 ppm	Ni	nickel	1 ppm
Bi	bismuth	5 ppm	Pb	lead	2 ppm
Ca	calcium	0.01 %	Sb	antimony	5 ppm
Cd	cadmium	0.2 ppm	Sc	scandium	5 ppm
Co	cobalt	1 ppm	Sn	tin	20 ppm
Cr	chromium	1 ppm	Sr	strontium	1 ppm
Cu	copper	1 ppm	Ta	tantalum	10 ppm
Fe	iron	0.01 %	Te	tellurium	10 ppm
Ga	gallium	2 ppm	Ti	titanium	0.01 %
K	potassium	0.01 %	V	vanadium	1 ppm
La	lanthanum	1 ppm	W	tungsten	20 ppm
Li	lithium	1 ppm	Y	yttrium	1 ppm
Mg	magnesium	0.01 %	Zn	zinc	1 ppm
Mn	manganese	1 ppm	Zr	zirconium	1 ppm

Table 3. Methods and Minimum Detections for Ore Grade Runs

Element	Element	Method	Minimum Detection
Ag	silver	fire assay, gravimetric finish	0.7 ppm
Au	gold	fire assay, gravimetric finish	0.17 ppm
Bi	bismuth	atomic absorption low level assay	0.005 %
Ba	barium	atomic absorption	0.01 %
Cu	copper	atomic absorption low level assay	0.01 %
Fe	iron	atomic absorption low level assay	0.01 %
Pb	lead	atomic absorption low level assay	0.01 %
Sb	antimony	atomic absorption low level assay	0.01 %
W	tungsten	ICP - peroxide sinter extraction	0.01 %
Zn	zinc	atomic absorption low level assay	0.01 %

Table 4. Analytical Methods and Detection Limits by Element for 1994 Samples

Element	Element	Analytical Method	Minimum Detection
Au	gold	neutron activation	5 ppb
	gold	fineness	0.10 ppt
Pt	platinum	fire assay - DCP	5 ppb
Pd	palladium	fire assay - DCP	1 ppb
Ag	silver	neutron activation	5 ppm
	silver (ore grade)	fire assay	0.02 oz/ton
Cu	copper (ore grade)	atomic absorption	0.01 %
Pb	lead (ore grade)	atomic absorption	0.01 %
Zn	zinc	neutron activation	200 ppm
Mo	molybdenum	neutron activation	2 ppm
Ni	nickel	neutron activation	20 ppm
Co	cobalt	neutron activation	10 ppm

Table 4 (cont.) Analytical Methods and Detection Limits by Element for 1994 Samples

Element	Element	Analytical Method	Minimum Detection
Cd	cadmium	neutron activation	10 ppm
As	arsenic	neutron activation	1 ppm
Sb	antimony	neutron activation	0.2 ppm
	antimony (ore grade)	atomic absorption	0.01 %
Hg	mercury	cold vapor AA	0.010 ppm
Fe	iron	neutron activation	0.5 %
Te	tellurium	neutron activation	20 ppm
Ba	barium	neutron activation	100 ppm
Cr	chromium	neutron activation	50 ppm
Sn	tin	neutron activation	200 ppm
W	tungsten	neutron activation	2 ppm
La	lanthanum	neutron activation	5 ppm
Na	sodium	neutron activation	0.05 %
Sc	scandium	neutron activation	0.5 ppm
Ta	tantalum	neutron activation	1 ppm
Zr	zirconium	neutron activation	500 ppm

Appendix B - Analytical Results

Sample Site

core	drill core
drum	55 gallon drum
flt	float
otc	outcrop
rub	rubblecrop
tail	mine tailings
trn	trench

Sample Type

cont	continuous chip
grab	grab sample
pan	pan sample
plac	placer sample
rand	random chip
rep	representative chip
sed	sediment sample
sel	select
slu	sluice concentrate
soil	soil sample
spac	spaced chip

Placer gold: size classification

v. fine	< 0.5 mm
fine	0.5 - 1.0 mm
coarse	1 -2 mm
v. coarse	> 2 mm

Footnotes:

Bold numbers indicate multiple erratic results, which were averaged.
IS denotes insufficient sample volume for analysis of all elements.
Results for Au are reported in ppb unless other units are stated.

Sample Description

abu	abundant
Ag	silver
alt	altered, alteration
amph	amphibole
ank	ankerite
apy	arsenopyrite
Au	gold
az	azurite
ba	barite
bio	biotite
blk	black
bn	bornite
box	boxworks
brn	brown
ca	calcite
calc	calcareous
carb	carbonate
cc	chalcocite
cgl	conglomerate
ch	chlorite
comp	composite
con	concentrate
cont	continuous
cpy	chalcopyrite
cst	cassiterite
Cu	copper
cv	covellite
diss	disseminated
ep	epidote
feld	feldspar
ft	foot (12 inches)
gar	garnet
gn	galena
gwy	graywacke
hbl	hornblende
hem	hematite
hfls	hornfels
Hg	mercury
hydro	hydrothermal
in	inch
intr	intrusive

Sample Description

lim	limonite
ls	limestone
lt	light
mag	magnetite
mal	malachite
mdst	mudstone
meta	metamorphic
MnO	manganese oxide
Mo	molybdenum
mod	moderate
monz	monzonite
musc	muscovite
oz/cyd	ounces per cubic yard
oz/st	ounces per short ton
po	pyrrhotite
ppb	parts per billion
ppm	parts per million
psuedo	psuedomorph
py	pyrite
qtz	quartzite
qz	quartz
sch	scheelite
sco	scorodite
sed	sediment
ser	sericite
serp	serpentinized
sid	siderite
sl	sphalerite
slts	siltstone
ss	sandstone
stb	stibnite
tet	tetrahedrite
tm	tourmaline
tr	trace
v	very
val	valentinite
volc	volcanic
w/	with
xcut	crosscutting
xln	crystalline
xls	crystals

Elements

Ag	silver
Al	aluminum
As	arsenic
Au	gold
Ba	barium
Bi	bismuth
Ca	calcium
Cd	cadmium
Co	cobalt
Cr	chromium
Cu	copper
Fe	iron
Ga	gallium
Hg	mercury
K	potassium
La	lanthanum
Li	lithium
Mg	magnesium
Mn	manganese
Mo	molybdenum
Na	sodium
Nb	niobium
Ni	nickel
Pb	lead
Pd	palladium
Pt	platinum
Sb	antimony
Sc	scandium
Sn	tin
Sr	strontium
Ta	tantalum
Te	tellurium
Ti	titanium
V	vanadium
W	tungsten
Y	yttrium
Zn	zinc
Zr	zirconium

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
1	8051	Kuyuktuvuk Ck	flt	grab	felsic volc-qz vein? w/ py, mal, lim	<5			<5			<200	3	<20	<10	<10		8
2	8052	Trembley Ck	rub	grab	carbonaceous paper shale	<5			<5			<200	<2	48	14	<10		72
3	8053	Big Jim Ck	rub	grab	qz vein w/ lim	<5			<5			<200	2	<20	<10	<10		5
3	8054	Big Jim Ck	otc	sel	qz vein w/ < 1% cpy, tr gn	<5			<5	0.36%		<200	6	<20	<10	<10		4
4	10808	Allen River		sed		<5			<0.2	47	29	130	<1	51	21	<0.2	<5	7
4	10809	Allen River		pan	one fine Au (?), no mag	18	<5	<1	<0.2	65	48	137	<1	52	20	0.4	<5	9
5	10810	Allen River		pan		24	<5	<1	<0.2	120	49	127	<1	56	20	<0.2	<5	8
5	10811	Allen River		pan		18	<5	<1	<0.2	70	28	132	<1	56	19	0.3	<5	7
6	10776	John River trib.		sed		8			<0.2	52	16	143	<1	46	18	<0.2	<5	7
6	10777	John River trib.		pan	tr py, no mag, no visible Au	18	<5	<1	<0.2	85	44	184	<1	49	19	0.4	<5	9
6	10778	John River trib.	flt	sel	massive qz w/ tr gn and cpy	<5			<0.2	19	59	34	2	15	4	<0.2	<5	<5
7	10779	Hunt Fork John River	flt	sel	phyllite w/ tr cpy	<5			<0.2	26	16	26	<1	12	4	0.4	<5	<5
8	8012	Lucky Six Ck	flt	grab	qz-carb vein w/ tet, mal, az	<75			43			<1100	<18	<110	<10	<88		672
9	8013	Lucky Six Ck	flt	grab	vein qz w/ graphitic partings, mal	6			8			<200	12	49	23	<10		3
10	10832	Arrigetch Peaks	flt	sel	skarn w/ massive sulfides, greissen	<5			<0.2	163	36	32	<1	17	<1	<0.2	<5	<5
10	10833	Arrigetch Peaks	flt	sel	skarn w/ massive sulfides, greissen	8			<0.2	195	2	43	<1	14	13	<0.2	<5	<5
10	10834	Arrigetch Peaks	flt	sel	banded schist w/ py, tm (?)	<5			<0.2	30	5	38	<1	13	7	<0.2	<5	<5
10	10835	Arrigetch Peaks	flt	sel	skarn w/ cpy py, lim	8			0.6	3874	15	59	<1	29	115	<0.2	<5	17
11	10827	Arrigetch Peaks	flt	sel	skarn w/ abu mag, tr mal	<5			0.3	904	8	1674	<1	3	3	3.5	<5	7
11	10828	Arrigetch Peaks	flt	sel	skarn w/ py and cpy, ep, hbl	<5			<0.2	174	3	229	<1	34	11	0.5	<5	10
11	10829	Arrigetch Peaks	flt	sel	skarn w/ massive py, cpy, po	44			<0.2	3042	19	75	<1	115	269	<0.2	<5	8
11	10830	Arrigetch Peaks	otc	sel	skarn w/ abu mag, mod mal	<5			<0.2	66	33	280	<1	4	6	0.4	36	12
12	10780	Arrigetch Peaks	otc	cont	4.5 ft-wide skarn w/ >20% mag, tr mal	<5			<0.2	3	15	233	<1	1	4	<0.2	11	15
12	10861	Arrigetch Peaks	otc	cont	4.0 ft-wide skarn w/ massive mag, mal	10			<0.2	29	7	219	<1	2	3	<0.2	88	25
12	10862	Arrigetch Peaks	rub	ran	gar ep skarn w/ 5% mag	30			<0.2	13	6	183	<1	5	4	<0.2	34	16
13	10863	Arrigetch Peaks	rub	ran	mag rich skarn w/ minor py	14			0.9	1142	17.	7782	<1	<1	<1	33.0	79	238
13	10864	Arrigetch Peaks	otc	sel	qz vein w/ massive sulfides locally	60			2.4	4492	74	262	<1	<1	8	<0.2	859	>10000
14	10898	Helpmejack Mn	rub	sel	greenstone w/ <1% po, lim	<1			<0.2	119	<2	60	2	40	24	<0.2	<5	<5
15	10899	Helpmejack Ck		sed		2			<0.2	16	7	73	<1	26	11	0.2	<5	6
15	10900	Helpmejack Ck		pan		54	<5	<1	<0.2	19	7	76	4	29	13	<0.2	<5	10
15	10934	Helpmejack Ck	otc	grab	greenstone w/ no sulfides	<1			<0.2	26	3	103	2	10	4	<0.2	<5	<5
16	10935	Rockybottom Ck		plac	6 v fine, flat Au flakes	0.0003 oz/cyd	<5	4	<0.2	40	4	69	<1	35	16	<0.2	<5	9
17	11020	Ann Group	otc	cont	5.5 ft-wide schist w/ >20% gn and sl	2478			2.64 oz/ton	250	3.34%	4.31%	3	6	3	<492.9	<5	>10000
17	11028	Ann Group	otc	sel	pelitic schist w/ gn, sl, py, cpy	1438			8.23 oz/ton	773	11.24%	6.11%	2	2	<1	<657.1	7	>10000
18	11043	Buzz	otc	cont	4.4 ft-wide marble w/ >20% gn, sl, py	2337			5.73 oz/ton	1509	7.23%	22.69%	4	4	2	1008.1	274	6480
18	11044	Buzz	trn	rep	9 ft-wide exposure w/ 25% gn, 25% sl	2435			2.20 oz/ton	1451	3.93%	4.70%	4	7	3	<358.9	23	>10000

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
1	8051	15.0		1.7		<20	1400	290		<200	<2	13				0.13							2.3	<1		<500
2	8052	8.2		3.9		<20	580	160		<200	3	36				0.15							19.0	<1		<500
3	8053	12.0		1.0		<20	<100	320		<200	<2	<5				<0.05							1.7	<1		<500
3	8054	16.0		1.2		<20	<100	380		<200	<2	<5				<0.05							0.6	<1		<500
4	10808	<5	0.104	5.52	592	<10	50	23	24	<20	<20	6	1.56	0.88	0.45	0.01	0.03	19	5	2	39	2	<5	<10	<0.01	5
4	10809	<5	0.098	5.67	612	<10	689	93	34	<20	<20	6	2.16	0.87	0.33	0.09	0.23	33	6	4	37	3	6	<10	<0.01	8
5	10810	<5	0.076	5.65	566	<10	519	74	38	<20	<20	6	2.51	0.93	0.25	0.09	0.25	31	5	4	46	3	5	<10	<0.01	8
5	10811	<5	0.092	5.67	575	<10	289	56	33	<20	<20	5	2.22	0.93	0.27	0.05	0.16	25	5	4	46	3	<5	<10	<0.01	8
6	10776	<5	0.081	5.53	648	<10	26	20	22	<20	<20	5	1.37	0.93	0.43	<0.01	0.03	15	4	<2	31	2	<5	<10	<0.01	3
6	10777	<5	0.394	6.45	731	<10	193	99	38	<20	<20	6	1.96	1.04	0.40	0.05	0.17	23	4	3	35	3	5	<10	<0.01	5
6	10778	<5	<0.010	1.72	807	<10	9	186	10	<20	<20	3	0.74	0.35	1.99	0.01	0.03	77	8	<2	13	<1	<5	<10	<0.01	1
7	10779	<5	0.201	1.83	770	<10	10	200	9	<20	<20	3	0.38	0.64	1.77	0.01	0.03	22	3	<2	6	<1	<5	<10	<0.01	1
8	8012	3580.0		<0.8		<360	<720	<320		<3300	<9	<5				<0.35							1.5	<2		<2300
9	8013	3.3		2.8		<20	140	340		<200	<2	11				0.10							7.0	<1		<500
10	10832	<5	0.024	>10.00	217	<10	3	6	2	<20	<20	7	0.06	0.03	1.74	<0.01	0.01	44	3	<2	2	<1	<5	<10	<0.01	<1
10	10833	<5	<0.010	>10.00	1545	<10	23	84	24	<20	<20	6	2.26	1.23	1.99	0.14	0.39	17	3	3	18	2	<5	<10	0.09	<1
10	10834	<5	<0.010	2.85	587	<10	36	23	13	<20	<20	16	1.43	1.48	>10.00	0.01	0.38	335	15	<2	23	<1	<5	<10	0.03	<1
10	10835	<5	0.015	>10.00	66	<10	3	78	2	<20	<20	6	0.07	0.03	0.07	<0.01	0.01	3	4	<2	3	1	<5	<10	<0.01	<1
11	10827	<5	<0.010	>10.00	1579	<10	76	23	25	902	83	14	3.71	0.71	>10.00	0.60	1.08	92	7	14	13	3	<5	<10	0.09	4
11	10828	<5	<0.010	2.33	557	<10	12	88	19	<20	<20	2	0.60	0.61	3.09	0.02	0.05	47	7	<2	21	2	<5	<10	0.10	<1
11	10829	<5	<0.010	>10.00	690	<10	2	31	9	288	<20	8	0.53	0.03	3.09	0.01	0.01	11	6	<2	2	<1	<5	<10	0.04	8
11	10830	<5	<0.010	>10.00	1433	<10	21	22	20	601	<20	22	1.92	0.91	>10.00	0.23	0.40	77	11	3	9	4	<5	<10	0.16	5
12	10780	<5	<0.010	>10.00	1299	<10	16	10	13	142	<20	13	0.65	0.62	2.17	0.13	0.17	23	5	3	7	<1	<5	<10	0.03	2
12	10861	<5	<0.010	>10.00	1401	<10	27	14	17	165	80	21	1.07	0.90	3.71	0.14	0.52	30	7	11	28	3	<5	<10	0.05	1
12	10862	<5	<0.010	>10.00	910	<10	17	39	18	111	57	26	1.65	0.72	3.86	0.06	0.41	53	11	9	40	3	<5	<10	0.10	7
13	10863	<5	0.017	>10.00	2804	<10	8	7	5	87	<20	18	0.37	0.20	1.65	0.07	0.12	7	2	7	9	2	<5	<10	0.02	1
13	10864	29	0.012	>10.00	308	<10	2	30	9	<20	<20	15	0.92	0.35	4.16	0.05	0.06	11	6	19	16	1	<5	<10	0.01	3
14	10898	<5	<0.010	5.60	852	<10	351	54	123	<20	<20	5	3.61	2.18	2.50	0.06	0.13	22	11	5	18	<1	<5	<10	0.37	8
15	10899	<5	0.031	2.55	410	<10	79	17	24	<20	<20	20	1.14	0.70	0.65	<0.01	0.05	20	9	<2	18	<1	<5	<10	0.03	<1
15	10900	<5	0.022	6.92	2118	<10	57	252	64	<20	<20	73	1.81	0.66	0.93	0.02	0.07	22	34	<2	17	<1	12	<10	0.12	<1
15	10934	<5	<0.010	1.89	297	<10	41	161	30	<20	<20	43	2.26	0.40	2.57	0.05	0.17	34	146	14	4	5	<5	<10	0.12	45
16	10935	<5	0.142	5.45	818	<10	170	100	133	<20	<20	15	2.33	1.20	1.37	0.03	0.13	81	12	5	26	<1	10	<10	0.24	11
17	11020	1238	8.500	>10.00	6618	22	10	105	2	<20	<20	3	0.18	1.87	4.30	<0.01	0.08	54	3	<2	4	<1	<5	<10	<0.01	<1
17	11028	>2000	11.900	>10.00	9525	17	<1	67	<1	<20	<20	1	0.08	1.29	4.15	<0.01	0.02	54	3	<2	2	<1	<5	<10	<0.01	<1
18	11043	531	12.120	>10.00	1927	89	<1	67	<1	<20	<20	<1	0.04	0.38	1.05	<0.01	0.01	14	<1	<2	<1	<1	<5	<10	<0.01	<1
18	11044	>2000	2.030	>10.00	4338	<10	<1	59	1	<20	<20	<1	0.12	2.10	2.87	0.01	0.04	39	<1	<2	2	<1	<5	<10	<0.01	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
19	11045	ABO	flt	sel	dolomitized ls w/ sl, tr py, gn (?)	77			0.34 oz/ton	56	1.80%	22.41%	<1	5	34	210.5	<5	123
20	11029	ABO	otc	cont	silicious rock w/ abu sl	19			2.7	39	0.34%	12.92%	<1	7	17	102.0	<5	128
21	10878	Sixtymile Ck		sed		4			0.2	16	13	49	<1	14	8	<0.2	<5	33
21	10879	Sixtymile Ck		pan	tr mag	44	<5	<1	0.9	8	12	39	1	10	6	<0.2	<5	13
21	10901	Sixtymile Ck		sed		5			0.2	14	12	58	<1	13	7	<0.2	<5	16
21	10902	Sixtymile Ck		pan	mod mag, no visible Au	12	<5	<1	0.5	9	8	34	2	14	5	<0.2	<5	9
22	10841	Rock Ck		sed		6			<0.2	7	4	20	<1	5	3	<0.2	<5	9
22	10842	Rock Ck		pan	abu mag (fine and coarse)	54	<5	<1	<0.2	15	8	44	<1	24	15	<0.2	<5	14
22	10843	Rock Ck	flt	sel	greenschist w/ abu mag	7			<0.2	71	<2	130	<1	58	42	<0.2	<5	<5
22	10844	Rock Ck		pan		IS	<5	<1	<0.2	13	9	24	<1	12	7	<0.2	<5	15
23	10903	Bullrun Ck		sed		4			<0.2	19	8	56	<1	17	8	<0.2	<5	7
23	10904	Bullrun Ck		pan		131	<5	<1	<0.2	22	9	56	2	21	10	<0.2	<5	7
24	10905	Bullrun Ck		sed		3			<0.2	37	17	88	1	24	14	0.3	<5	12
24	10906	Bullrun Ck		pan	tr mag, no visible Au	>10000	5	2	<0.2	19	10	76	2	21	11	<0.2	<5	9
25	8014	Crevice Ck		slu	placer con	8130	<5	<1	<5			<200	<2	48	26	<10		15
26	10547	Crevice Ck		pan	3 pan comp w/ 2 coarse Au, abu mag	282.31 ppm			11.6	40	56	64	<1	37	23	<0.2	<5	44
26	10646	Crevice Ck	flt	sel	heavy iron-rich cobble	44			0.3	203	23	21	<1	8	4	0.5	<5	14
27	10548	Crevice Ck		pan	abu mag xls	27.12 ppm			1.3	47	61	69	<1	40	24	<0.2	<5	15
28	10845	McCamant Ck		sed		2			<0.2	30	9	59	<1	22	9	<0.2	<5	10
28	10846	McCamant Ck		pan		3	<5	<1	<0.2	64	20	131	3	32	23	0.2	<5	9
28	10847	McCamant Ck	otc	sel	qz veinlets w/ minor po and tr cpy	3			<0.2	92	8	78	2	32	10	0.3	<5	6
29	10836	McKinley Ck		sed		<5			<0.2	13	10	39	<1	8	5	<0.2	<5	15
29	10837	McKinley Ck		pan	2 coarse Au, abu mag and py	625	<5	<1	1	37	296	70	<1	18	15	<0.2	<5	77
30	10838	McKinley Ck		pan	mod mag and sulfides	6	<5	<1	<0.2	20	9	28	<1	12	8	<0.2	<5	26
30	10839	McKinley Ck		pan	2 pan comp, minor mag	IS	<5	<1	0.9	158	286	102	<1	40	28	<0.2	<5	140
30	10840	McKinley Ck	otc	rep	ch schist w/ rusty sulfides	<5			<0.2	14	20	24	<1	8	4	<0.2	<5	<5
31	8016	Allen River	rub	sel	qz vein w/ < 1% cpy	<5			<5			<200	<2	<20	<10	<10		73
32	10912	Trout Lake		pan	mod mag	17	<5	<1	0.2	18	5	62	2	28	14	<0.2	<5	8
32	10913	Trout Lake		pan	abu mag, no visible Au	7	<5	<1	0.5	14	9	53	2	25	12	<0.2	<5	11
32	10914	Trout Lake	flt	rep	greenstone w/ 1% py	<1			<0.2	47	<2	86	2	23	27	<0.2	<5	<5
33	10915	Unnamed Occurrence	rub	sel	green ch schist w/ cpy, po	<1			<0.2	64	<2	91	1	40	45	<0.2	<5	<5
33	10916	Unnamed Occurrence	rub	sel	green ch schist w/ 3% py cubes	2			<0.2	47	10	35	4	28	10	<0.2	<5	33
34	10769	Seward Ck		sed		54			<0.2	20	5	58	<1	20	11	<0.2	<5	6
34	10770	Seward Ck		pan	tr mag, no visible Au	6	<5	<1	<0.2	26	15	99	<1	40	21	<0.2	<5	9
35	10771	Sirr Ck		sed		<5			<0.2	28	6	68	<1	27	11	<0.2	<5	9
35	10772	Sirr Ck		pan	tr mag, no visible Au	<5	<5	<1	<0.2	40	13	88	<1	35	14	<0.2	<5	14

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
19	11045	84	20.980	4.71	3898	46	15	50	<1	<20	<20	5	0.05	3.08	7.92	<0.01	0.04	171	3	<2	1	<1	<5	<10	<0.01	<1
20	11029	47	9.980	2.96	2960	31	25	63	<1	<20	<20	<1	0.02	5.55	>10.00	<0.01	<0.01	142	2	<2	1	2	<5	<10	<0.01	<1
21	10878	<5	0.027	1.74	289	<10	33	15	12	<20	<20	17	0.64	0.91	5.65	<0.01	0.21	105	10	<2	10	<1	<5	<10	0.02	<1
21	10879	<5	0.088	2.03	265	<10	43	90	8	<20	<20	7	0.59	1.07	>10.00	0.01	0.10	260	8	<2	9	<1	<5	<10	0.02	<1
21	10901	<5	0.025	1.76	378	<10	29	9	10	<20	<20	12	0.60	0.53	5.14	<0.01	0.08	125	7	<2	10	<1	<5	<10	0.01	<1
21	10902	<5	0.014	1.73	285	<10	27	233	12	<20	<20	9	0.65	0.47	>10.00	0.02	0.14	273	5	<2	9	<1	<5	<10	0.04	1
22	10841	<5	0.017	1.13	234	<10	11	2	6	<20	<20	16	0.17	1.08	>10.00	<0.01	<0.01	369	7	<2	3	<1	<5	<10	<0.01	<1
22	10842	<5	0.045	>10.00	225	<10	140	49	346	<20	<20	16	0.35	0.81	>10.00	<0.01	0.05	340	6	<2	7	21	<5	<10	0.05	2
22	10843	<5	0.012	8.94	971	<10	39	91	200	<20	<20	6	2.96	3.04	2.60	0.02	0.07	69	8	8	57	16	13	<10	0.22	<1
22	10844	<5	0.016	6.01	214	<10	55	69	99	<20	<20	17	0.35	0.73	>10.00	<0.01	0.05	469	7	<2	6	5	<5	<10	0.04	1
23	10903	<5	0.017	2.86	533	<10	22	18	25	<20	<20	13	1.01	1.15	3.07	<0.01	0.05	74	8	<2	13	<1	<5	<10	0.03	<1
23	10904	<5	0.025	3.12	639	<10	57	203	26	<20	<20	9	1.29	1.23	3.05	0.02	0.12	66	7	<2	17	<1	<5	<10	0.04	<1
24	10905	<5	0.033	3.31	1571	<10	45	16	21	<20	<20	18	0.99	1.13	2.70	<0.01	0.06	60	8	<2	13	<1	<5	<10	0.02	<1
24	10906	<5	0.020	3.86	1465	<10	44	147	31	<20	<20	13	1.24	1.30	2.50	0.02	0.11	56	7	<2	14	<1	<5	<10	0.04	<1
25	8014	3.4		>10.0		<20	<100	<50		<200	2	9				<0.05							2.4	<1		<500
26	10547	10	1.102	>10.00	1220	<10	104	222	246	<20	<20	11	1.44	0.71	2.75	0.07	0.23	73	13	<2	11	4	5	<10	0.17	3
26	10646	14	<0.010	>10.00	25	<10	17	66	147	<20	35	2	0.19	0.03	0.02	0.01	0.01	3	2	2	3	<1	<5	<10	0.06	2
27	10548	<5	0.231	>10.00	1572	<10	84	169	313	<20	<20	11	1.48	0.73	3.02	0.08	0.22	83	14	<2	12	5	6	<10	0.20	4
28	10845	<5	0.029	2.45	460	<10	16	14	16	<20	<20	10	0.80	0.75	4.45	<0.01	0.03	151	8	<2	14	<1	<5	<10	<0.01	<1
28	10846	<5	0.024	9.56	686	<10	57	131	95	<20	<20	16	1.86	1.08	0.30	0.02	0.12	15	8	<2	29	1	<5	<10	0.03	2
28	10847	<5	<0.010	2.57	1014	<10	35	215	23	<20	<20	10	1.27	0.60	2.17	0.04	0.14	62	7	<2	16	<1	<5	<10	<0.01	<1
29	10836	<5	0.028	1.49	310	<10	45	4	7	<20	<20	18	0.38	1.11	>10.00	<0.01	0.02	335	7	<2	8	<1	<5	<10	<0.01	1
29	10837	9	0.224	7.32	317	<10	33	58	48	<20	<20	18	0.48	1.08	>10.00	0.01	0.08	346	8	<2	9	3	<5	<10	0.14	3
30	10838	<5	0.015	2.07	257	<10	104	69	13	<20	<20	15	0.49	0.62	>10.00	<0.01	0.07	464	7	<2	8	<1	<5	<10	0.07	2
30	10839	11	0.743	9.61	318	<10	27	112	65	<20	<20	28	0.58	1.04	8.95	<0.01	0.08	281	12	<2	9	5	<5	<10	0.21	5
30	10840	<5	<0.010	1.39	301	<10	19	89	5	<20	<20	11	0.83	0.77	6.28	0.02	0.13	257	14	<2	8	<1	<5	<10	0.01	2
31	8016	117.0		0.6		<20	<100	270		<200	<2	<5				0.21							<0.5	<1		<500
32	10912	<5	0.026	5.86	476	<10	28	110	52	<20	<20	39	1.26	1.36	9.25	0.03	0.11	317	8	<2	24	<1	<5	<10	0.07	<1
32	10913	<5	0.024	4.65	452	<10	36	80	41	<20	<20	19	1.14	1.14	>10.00	0.02	0.11	472	7	<2	20	1	<5	<10	0.06	<1
32	10914	<5	<0.010	6.82	889	<10	167	40	147	<20	<20	9	2.62	1.96	2.37	0.09	0.39	54	25	5	9	<1	8	<10	0.24	<1
33	10915	<5	<0.010	9.31	1261	<10	<1	98	232	<20	<20	<1	4.45	4.43	3.33	0.01	<0.01	117	11	5	89	2	21	<10	0.42	<1
33	10916	<5	0.018	3.85	268	<10	47	222	18	<20	<20	10	1.38	0.36	2.73	0.02	0.22	144	8	<2	14	<1	<5	<10	<0.01	4
34	10769	<5	<0.010	4.90	654	<10	10	24	48	<20	<20	17	0.63	0.67	0.73	<0.01	0.01	24	6	<2	12	4	<5	<10	0.08	<1
34	10770	<5	<0.010	5.92	856	<10	39	121	55	<20	<20	33	1.66	1.28	0.48	0.07	0.12	27	7	3	24	4	<5	<10	0.06	3
35	10771	<5	0.027	3.24	598	<10	21	24	35	<20	<20	11	1.41	1.13	2.53	<0.01	0.03	73	6	2	16	3	<5	<10	0.04	2
35	10772	<5	0.272	4.54	920	<10	49	90	49	<20	<20	13	2.07	1.52	4.78	0.02	0.11	158	7	3	25	3	<5	<10	0.06	4

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
36	8015	Bar Ck	rub	sel	ls w/ 5-10% py, rusty qz	<5			<5			<200	<2	<20	<10	<10		2
37	10883	Unnamed Occurrence	flt	sel	brecciated ls w/ cc (< 1%), mal	6			0.2	585	1744	17	<1	2	<1	<0.2	<5	46
38	10884	Unnamed Occurrence	otc	sel	ch-qz schist w/ cc, mal, az	23			4.8	1664	19	40	19	11	4	0.6	<5	286
38	10885	Unnamed Occurrence	flt	sel	qz rich rock w/ <5% py	<5			2.1	40	60	53	12	8	1	<0.2	<5	158
39	10783	Upper Sheep Ck	flt	sel	ls w/ 10% cpy, tr mal	14			1.5	9.00%	28	145	<1	1	6	<0.2	<5	11
39	10784	Upper Sheep Ck	flt	sel	qz w/ 20% cpy, mal, tr az	46			6.6	13.40%	52	212	<1	18	6	<0.2	<5	362
39	10785	Upper Sheep Ck	flt	sel	qz-ch schist w/ mal or fuchsite	<5			0.3	872	27	21	<1	6	2	0.3	<5	<5
39	10802	Upper Sheep Ck	flt	sel	vein qz w/ minor mal and az	<5			0.4	1551	<2	73	<1	33	40	<0.2	<5	348
39	10803	Upper Sheep Ck	flt	sel	vein qz w/ mal and bn (?)	23			3.8	3597	4	45	6	13	6	<0.2	<5	<5
39	10804	Upper Sheep Ck	otc	sel	qz vein w/ 5% cpy and po, mal	15			5.9	4.70%	21	190	15	45	24	1.3	<5	<5
39	10805	Upper Sheep Ck	otc	sel	qz vein w/ bn, cpy, po (?), mal, az	26			78.6	16.53%	150	212	1	10	5	1.7	<5	151
40	10806	Unnamed Occurrence	flt	sel	micaceous schist w/ bn, mal	17			68.9	11.00%	37	146	<1	8	2	<0.2	<5	<5
40	10807	Unnamed Occurrence	flt	sel	ls w/ lim	<5			<0.2	197	<2	93	<1	10	6	<0.2	<5	<5
40	10831	Unnamed Occurrence	flt	sel	qz-ch schist w/ 5% bn or gn (?), mal	6			2.7	3527	8	51	1	19	8	<0.2	<5	<5
41	10641	Sirr Mtn	otc	rand	ch schist w/ qz-carb lenses	<5			<0.2	84	6	125	<1	74	21	0.5	<5	<5
42	10642	Sirr Mtn	flt	sel	vein qz w/ tet, cpy, mal	<5			2.1	401	220	1	2	9	<1	0.2	<5	<5
43	10643	Sirr Mtn	flt	rand	qz lenses in schist w/ lim	<5			<0.2	14	27	38	1	15	4	0.3	<5	17
44	10645	Sirr Mtn	flt	sel	vein qz w/ tr py, gn, lim	<5			0.3	10	60	25	1	11	3	0.3	<5	6
45	10644	Sirr Mtn	otc	rand	dark gray phyllite	<5			<0.2	52	3	81	<1	31	19	<0.2	<5	<5
46	10933	Surprise Ck	rub	sel	qz vein w/ ch partings, tr cpy	2			0.6	19	53	11	2	6	2	<0.2	<5	<5
47	10956	Surprise Ck	flt	sel	qz veinlets w/ cal, ank (?)	<1			0.4	4	5	34	2	12	7	<0.2	<5	15
48	10955	Surprise Ck	otc	ran	qz-musc-calc schist w/ mal, fuchsite	3			0.5	20	4	33	2	18	8	<0.2	<5	<5
49	10931	Surprise Ck	otc	ran	qz vein w/ apy, tr py, lim	63			0.5	10	7	35	2	19	10	0.6	<5	162
50	10932	Surprise Ck	flt	sel	calc schist w/ qz, py, lim, fuchsite (?)	<1			0.5	12	7	32	2	9	4	<0.2	<5	14
51	11034	Surprise Ck		sed		4			<0.2	18	6	66	<1	22	11	<0.2	<5	6
51	11035	Surprise Ck		pan	no mag	<1	<5	<1	<0.2	24	7	83	3	42	16	<0.2	<5	13
52	11039	Surprise Ck		sed		2			<0.2	20	5	59	<1	22	11	<0.2	<5	9
52	11040	Surprise Ck		pan	no mag	3	<5	<1	<0.2	19	4	93	2	39	20	<0.2	<5	13
53	11036	Surprise Ck	flt	sel	ch-qz schist w/ cv or tet (?), mal	12			1.4	861	8	28	1	12	5	<0.2	<5	<5
53	11037	Surprise Ck		sed		3			<0.2	20	6	56	<1	21	10	<0.2	<5	13
53	11038	Surprise Ck		pan	no mag, no visible Au	64	82	<1	<0.2	153	5	89	2	37	15	<0.2	<5	16
54	11041	Surprise Ck	flt	sel	conglomerate w/ sulfides (?)	3			<0.2	15	8	26	1	22	7	<0.2	<5	<5
55	11042	Surprise Ck	flt	sel	qz cobble w/ 1% euhedral py	163			0.8	8	10	77	24	24	6	0.4	<5	16
56	10787	Surprise Ck		sed		6			<0.2	31	10	83	<1	29	12	<0.2	<5	12
56	10788	Surprise Ck		pan	no mag, no visible Au	3889	<5	<1	<0.2	46	14	105	<1	41	16	<0.2	<5	21
57	10786	Surprise Ck	flt	sel	musc-qz schist w/ mal or fuchsite (?)	<5			<0.2	167	3	24	<1	9	6	<0.2	<5	6

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
36	8015	1.0		1.7		<20	<100	100		<200	<2	10				0.85							2.7	<1		<500
37	10883	921	0.048	0.48	760	<10	22	38	12	<20	<20	7	0.05	5.13	>10.00	<0.01	0.03	102	2	<2	3	2	<5	<10	<0.01	2
38	10884	67	22.460	1.31	310	<10	86	147	31	<20	<20	1	0.92	0.33	0.72	0.02	0.06	15	2	<2	2	3	<5	<10	<0.01	16
38	10885	20	0.521	4.82	167	<10	56	227	99	<20	<20	3	1.29	0.09	0.17	<0.01	<0.01	6	<1	4	<1	7	<5	<10	<0.01	19
39	10783	<5	0.560	7.83	105	<10	7	<1	1	<20	<20	9	0.02	0.07	>10.00	<0.01	<0.01	298	2	<2	<1	3	<5	<10	<0.01	<1
39	10784	87	17.220	>10.00	21	<10	4	35	3	<20	<20	3	0.08	<0.01	0.07	0.01	0.02	4	<1	<2	<1	9	<5	<10	<0.01	5
39	10785	<5	0.112	1.00	799	<10	308	76	11	<20	<20	14	0.67	0.43	9.86	<0.01	0.03	99	17	<2	11	<1	<5	<10	<0.01	3
39	10802	415	18.140	0.45	136	<10	8	2	<1	<20	<20	11	<0.01	0.15	>10.00	<0.01	0.01	763	2	<2	4	<1	<5	<10	<0.01	<1
39	10803	<5	0.199	1.82	213	<10	23	201	23	<20	<20	8	1.44	0.19	0.33	<0.01	0.06	5	3	3	4	2	<5	<10	<0.01	15
39	10804	<5	0.600	>10.00	1430	<10	5	35	40	<20	<20	14	2.37	2.17	3.98	<0.01	<0.01	37	8	5	33	6	8	<10	<0.01	22
39	10805	6	4.960	4.97	262	12	23	57	10	<20	<20	27	0.71	0.14	3.01	<0.01	0.11	44	8	3	2	7	<5	<10	<0.01	25
40	10806	<5	1.020	0.66	58	<10	7	43	14	<20	<20	13	0.76	0.19	0.44	0.07	0.04	24	6	3	9	8	<5	<10	<0.01	9
40	10807	<5	0.046	4.47	438	<10	8	4	19	<20	<20	10	0.04	6.32	>10.00	<0.01	0.02	268	12	<2	3	2	8	<10	<0.01	<1
40	10831	<5	0.173	0.90	103	<10	20	197	8	<20	<20	4	0.71	0.37	0.89	0.03	0.07	18	2	<2	13	<1	<5	<10	<0.01	11
41	10641	<5	<0.010	6.03	1016	<10	39	129	90	<20	<20	13	3.68	2.64	4.49	0.02	0.14	81	13	7	34	1	9	<10	0.13	8
42	10642	<5	0.074	0.34	41	<10	3	284	2	<20	<20	<1	0.03	<0.01	0.07	<0.01	<0.01	2	<1	<2	<1	<1	<5	<10	<0.01	1
43	10643	<5	0.012	2.43	667	<10	38	164	7	<20	<20	3	0.48	0.58	2.33	0.03	0.11	62	6	<2	1	<1	<5	<10	<0.01	10
44	10645	<5	0.017	1.39	387	<10	11	228	3	<20	<20	<1	0.12	0.13	1.19	0.01	0.04	19	2	<2	<1	<1	<5	<10	<0.01	4
45	10644	<5	<0.010	4.71	1636	<10	44	92	50	<20	<20	14	1.40	1.70	1.71	0.12	0.15	90	4	3	18	<1	5	<10	0.05	4
46	10933	<5	<0.010	0.72	477	<10	5	172	6	<20	<20	<1	0.30	0.23	8.39	<0.01	0.01	222	9	<2	3	<1	<5	<10	<0.01	<1
47	10956	6	0.025	4.60	854	<10	13	122	9	<20	<20	<1	0.05	1.73	8.71	0.01	0.02	429	16	<2	<1	<1	5	<10	<0.01	<1
48	10955	7	0.029	2.67	954	<10	31	103	21	<20	<20	1	1.20	1.16	>10.00	0.02	0.11	147	8	<2	5	<1	5	<10	<0.01	<1
49	10931	6	0.045	2.18	901	<10	22	135	13	<20	<20	<1	0.50	0.54	>10.00	0.02	0.06	184	17	<2	4	<1	5	<10	<0.01	<1
50	10932	<5	0.099	2.11	813	<10	18	152	11	<20	<20	<1	0.42	0.45	9.96	0.01	0.05	159	8	<2	2	<1	<5	<10	<0.01	<1
51	11034	<5	0.040	2.97	553	<10	35	24	31	<20	<20	15	1.25	0.85	0.53	<0.01	0.03	14	6	<2	15	<1	<5	<10	<0.01	<1
51	11035	<5	0.028	4.65	723	<10	74	295	53	<20	<20	41	2.11	0.78	0.47	0.05	0.15	23	6	2	25	<1	<5	<10	0.02	4
52	11039	<5	0.026	2.74	468	<10	25	23	27	<20	<20	11	1.31	0.92	0.48	<0.01	0.02	14	6	<2	15	1	<5	<10	<0.01	<1
52	11040	<5	0.015	5.07	709	<10	40	152	52	<20	<20	22	2.59	1.70	0.76	0.02	0.08	21	9	<2	28	<1	<5	<10	0.06	<1
53	11036	<5	0.490	1.44	1059	<10	41	127	12	<20	<20	1	0.71	0.67	9.65	0.02	0.04	129	7	<2	7	<1	<5	<10	<0.01	<1
53	11037	<5	0.022	2.54	475	<10	16	16	20	<20	<20	16	0.82	0.49	0.44	<0.01	0.02	15	5	<2	11	<1	<5	<10	<0.01	<1
53	11038	<5	0.022	5.29	755	<10	43	218	57	<20	<20	70	2.36	1.04	0.82	0.03	0.11	25	9	2	20	<1	<5	<10	0.03	1
54	11041	<5	0.035	1.21	81	<10	63	198	23	<20	<20	14	0.73	0.23	0.16	0.01	0.29	13	6	<2	8	<1	<5	<10	<0.01	8
55	11042	<5	0.090	9.28	5449	<10	24	14	17	<20	<20	3	0.04	1.92	>10.00	0.01	0.01	867	30	<2	<1	<1	18	<10	<0.01	<1
56	10787	<5	0.027	3.24	651	<10	24	21	30	<20	<20	17	1.23	0.87	1.06	<0.01	0.02	31	6	<2	19	2	<5	<10	0.02	1
56	10788	<5	0.013	5.40	702	<10	211	136	58	<20	<20	30	2.20	1.34	1.86	0.04	0.14	68	8	4	31	4	<5	<10	0.05	4
57	10786	<5	0.027	1.95	931	<10	19	68	17	<20	<20	11	0.55	0.35	>10.00	0.01	0.05	179	10	<2	3	<1	<5	<10	<0.01	1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
58	10694	Spring Ck		pan		617			<0.2	32	11	96	1	46	14	0.2	<5	58
58	10695	Spring Ck		sed		56			<0.2	33	7	80	1	26	13	0.2	<5	55
58	10696	Spring Ck	otc	sel	qz-mica schist w/ tr py	23			<0.2	24	<2	55	<1	17	8	0.8	<5	309
59	10691	Spring Ck		pan		592			<0.2	25	24	104	1	51	15	<0.2	<5	22
59	10692	Spring Ck		sed		20			<0.2	18	6	77	<1	23	12	<0.2	<5	7
59	10693	Spring Ck	trn	sel	vein qz w/ lim, ank (?)	6			<0.2	9	22	19	1	10	3	0.2	<5	33
60	10689	Spring Ck		pan		1704			<0.2	16	9	120	1	50	15	<0.2	<5	11
60	10690	Spring Ck		sed		48			<0.2	30	10	107	<1	31	15	0.3	<5	22
61	10687	Spring Ck		pan		1697			<0.2	28	6	88	2	47	13	<0.2	<5	24
61	10688	Spring Ck		sed		14			<0.2	22	5	73	<1	21	13	<0.2	<5	11
62	10684	Spring Ck		pan	minor mag	1689			<0.2	47	6	65	2	32	17	0.7	<5	61
62	10685	Spring Ck		sed		30			<0.2	26	5	65	<1	21	13	<0.2	<5	13
63	10686	Spring Ck	otc	rep	qz-mica schist	<5			<0.2	23	4	43	<1	19	8	<0.2	<5	6
64	10659	Lake Ck	flt	sel	vein qz w/ unknown gray mineral	<5			<0.2	12	3	8	<1	3	1	<0.2	<5	<5
65	10660	Lake Ck	flt	sel	vein qz w/ lim in schist	<5			<0.2	9	43	6	2	9	2	0.2	<5	16
66	10512	Lake Ck	otc	rand	calc-musc schist w/ qz lenses	<5			<0.2	21	5	37	1	14	6	0.2	<5	14
67	10513	Lake Ck		sed		72			<0.2	11	6	51	<1	17	12	<0.2	<5	<5
67	10514	Lake Ck		pan	tr mag	3043			<0.2	23	34	62	2	38	14	<0.2	<5	16
68	10515	Lake Ck	trn	sel	massive qz w/ tr cpy, mal	<5			<0.2	67	20	10	<1	5	1	0.2	<5	<5
68	10516	Lake Ck	flt	sel	vein qz w/ tr cpy and tet	15			0.3	247	20	103	<1	13	15	0.6	<5	49
69	10517	Lake Ck		pan		401			<0.2	19	75	76	1	41	13	<0.2	<5	12
69	10518	Lake Ck		sed		18			<0.2	21	4	65	<1	23	12	<0.2	<5	7
69	10519	Lake Ck	otc	rand	ch schist w/ qz lenses	<5			<0.2	13	3	83	<1	40	16	0.2	<5	<5
70	8011	Lake Ck	flt	grab	vein qz w/ tet, mal, sid	<5			<5			<200	3	<20	<10	<10		2
71	10520	Lake Ck	otc	rand	qz calcite pebble meta cgl	<5			<0.2	16	8	25	<1	9	5	0.3	<5	<5
72	10524	Lake Ck		pan		142			<0.2	19	11	92	<1	46	21	<0.2	<5	7
72	10525	Lake Ck		sed		<5			<0.2	25	6	70	<1	26	16	<0.2	<5	<5
73	10526	Lake Ck		slu	placer con	680.14 ppm			116.8	572	3.31%	52	2	134	187	4.2	352	914
73	10762	Lake Ck		slu	placer con	5471.13 ppm			1835.5	2366	41.11%	441	10	36	36	29.5	0.44%	1750
73	10781	Lake Ck		slu	placer con	1310.53 ppm	5930	<70	137.0	540	>10000	101	6	56	46	3.5	308	720
74	8055	Lake Ck		slu	placer con	>10000			>300			<2300	<220	<320	58	<300		1930
74	8056	Lake Ck		slu	Au fineness: 953.7 parts per thousand													
75	8010	Lake Ck		slu	placer con w/ nonmag fraction	2450	<5	<1	86			<200	<2	<20	<10	<10		6
76	10521	Lake Ck		pan		372			<0.2	34	11	90	1	47	16	<0.2	<5	15
76	10522	Lake Ck		sed		10			<0.2	23	5	61	<1	22	13	<0.2	<5	6
76	10523	Lake Ck	otc	rand	ch schist w/ qz lenses	<5			<0.2	9	4	72	<1	27	17	<0.2	<5	<5

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
58	10694	11	0.021	5.08	707	<10	202	303	79	<20	<20	24	3.27	1.20	1.52	0.17	0.50	72	10	3	25	2	7	<10	0.05	7
58	10695	7	<0.010	3.18	600	<10	38	20	26	<20	<20	9	1.01	0.76	3.49	0.01	0.02	136	6	3	16	5	<5	<10	0.02	3
58	10696	14	0.126	2.94	528	<10	83	79	21	<20	<20	5	0.63	0.78	6.63	0.06	0.19	182	6	<2	4	<1	5	<10	<0.01	5
59	10691	14	0.020	5.90	668	<10	204	301	89	<20	<20	35	3.15	1.03	0.32	0.15	0.48	44	9	3	25	2	6	<10	0.07	6
59	10692	<5	<0.010	3.04	530	<10	25	20	28	<20	<20	13	0.89	0.59	0.29	<0.01	0.01	12	5	3	13	4	<5	<10	0.03	2
59	10693	<5	<0.010	1.37	454	<10	11	129	5	<20	<20	<1	0.19	0.51	4.76	0.03	0.03	167	6	<2	2	<1	<5	<10	<0.01	2
60	10689	<5	0.020	4.55	775	<10	212	299	72	<20	<20	26	3.14	0.93	0.25	0.18	0.49	42	8	4	24	2	6	<10	0.02	6
60	10690	<5	0.073	3.64	616	<10	34	24	35	<20	<20	13	1.14	0.74	0.36	<0.01	0.02	15	6	3	18	5	<5	<10	0.03	3
61	10687	6	0.027	4.71	726	<10	178	377	62	<20	<20	28	2.72	0.73	0.26	0.17	0.42	35	8	4	19	2	5	<10	0.03	6
61	10688	<5	0.046	3.25	564	<10	30	19	30	<20	<20	13	0.75	0.51	0.31	<0.01	0.02	11	6	3	11	4	<5	<10	0.03	2
62	10684	8	0.027	5.74	481	<10	81	317	52	<20	<20	166	1.64	0.43	0.43	0.15	0.28	39	16	7	12	7	9	<10	0.05	8
62	10685	<5	0.058	3.25	476	<10	26	18	30	<20	<20	15	0.71	0.51	0.29	<0.01	0.01	12	6	3	11	4	<5	<10	0.04	2
63	10686	9	0.084	3.05	963	<10	29	54	18	<20	<20	3	0.57	0.96	>10.00	0.05	0.10	188	11	<2	5	<1	5	<10	<0.01	3
64	10659	<5	<0.010	0.80	493	<10	11	56	4	<20	<20	6	0.21	0.18	>10.00	0.02	0.03	157	10	<2	1	<1	<5	<10	<0.01	2
65	10660	<5	<0.010	0.61	216	<10	6	237	1	<20	<20	<1	0.05	<0.01	0.40	0.01	0.01	7	1	<2	<1	<1	<5	<10	<0.01	2
66	10512	<5	<0.010	2.73	1010	<10	28	54	22	<20	<20	<1	1.07	0.73	>10.00	0.07	0.08	178	10	2	11	<1	<5	<10	<0.01	4
67	10513	<5	0.032	3.87	443	<10	14	23	41	<20	<20	15	0.53	0.45	0.41	<0.01	0.01	14	7	3	8	5	<5	<10	0.07	2
67	10514	<5	0.112	6.52	576	<10	113	345	72	<20	<20	208	2.57	0.64	0.56	0.31	0.38	53	22	4	15	2	6	<10	0.07	4
68	10515	<5	<0.010	0.47	436	<10	8	81	3	<20	<20	<1	0.18	0.11	>10.00	0.01	0.03	437	10	<2	2	<1	<5	<10	<0.01	<1
68	10516	102	0.055	6.49	2126	<10	9	13	28	<20	<20	<1	0.47	1.84	>10.00	0.04	0.02	290	17	<2	17	<1	<5	<10	<0.01	2
69	10517	<5	<0.010	5.17	579	<10	91	313	49	<20	<20	29	2.62	1.07	1.16	0.14	0.29	35	7	4	20	3	<5	<10	0.02	3
69	10518	<5	0.028	3.35	517	<10	20	23	29	<20	<20	11	0.90	0.63	0.55	<0.01	0.01	17	6	3	11	4	<5	<10	0.03	2
69	10519	<5	<0.010	4.47	815	<10	61	66	30	<20	<20	12	2.98	1.62	4.42	0.03	0.26	44	8	6	32	<1	6	<10	<0.01	3
70	8011	2.0		0.6		<20	<100	410		<200	<2	<5				<0.05							1.1	<1		<500
71	10520	<5	<0.010	2.15	941	<10	57	39	10	<20	<20	4	0.75	0.77	>10.00	0.04	0.17	305	9	<2	2	<1	<5	<10	<0.01	3
72	10524	<5	<0.010	6.65	538	<10	79	188	79	<20	<20	31	2.95	1.53	0.49	0.24	0.31	40	9	<2	23	2	7	<10	0.10	2
72	10525	<5	0.021	3.92	569	<10	15	29	42	<20	<20	12	0.99	0.92	0.39	<0.01	0.01	17	6	3	16	7	<5	<10	0.06	2
73	10526	28	0.960	>10.00	533	39	12	267	143	<20	242	23	0.81	0.40	0.28	0.04	0.07	19	5	<2	9	3	<5	<10	0.11	6
73	10762	249	1.532	>10.00	124	293	13	181	152	512	719	191	0.08	0.02	0.12	<0.01	0.01	70	11	<2	<1	7	<5	<10	0.27	4
73	10781	51	3.294	>10.00	646	13	31	150	183	64	150	8	1.01	0.65	0.35	0.06	0.11	25	4	<2	15	5	<5	<10	0.07	8
74	8055	67.1		>10.0		<2100	<3700	3400		<18000	976	551				<0.39							7.7	<4		<6500
74	8056																									
75	8010	16.0		>10.0		<20	<100	83		<200	19	<5				<0.05							4.7	<1		<500
76	10521	<5	0.014	6.07	709	<10	98	222	61	<20	<20	54	2.82	1.12	1.47	0.21	0.33	56	9	4	24	2	6	<10	0.03	4
76	10522	<5	0.018	3.32	569	<10	22	20	29	<20	<20	9	0.73	0.62	1.51	<0.01	0.01	53	5	2	12	5	<5	<10	0.04	2
76	10523	<5	0.031	4.08	1164	<10	51	100	39	<20	<20	14	1.45	1.68	1.93	0.13	0.18	116	5	3	19	<1	<5	<10	0.06	4

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
77	11071	Lake Ck trib.		sed		1			<0.2	19	4	59	<1	24	14	<0.2	<5	9
77	11072	Lake Ck trib.		pan	minor black sands (not mag)	1	<5	<1	<0.2	15	<2	84	2	36	20	<0.2	<5	11
78	11019	Lake Ck trib.		pan		6	<5	<1	<0.2	16	8	87	1	37	21	<0.2	<5	11
79	10910	Wild River trib.		sed		2			<0.2	34	8	72	<1	28	14	<0.2	<5	18
79	10911	Wild River trib.		pan	no visible Au	4267	<5	<1	<0.2	15	3	82	2	38	19	<0.2	<5	9
80	11018	Mathews Dome	rub	sel	qz-calc schist w/ 0.5 cm py cubes	18			<0.2	36	17	121	1	45	28	0.9	<5	46
81	10552	Mathews Dome	flt	sel	ch schist w/ py cubes and lim	<5			<0.2	127	<2	75	3	30	52	<0.2	<5	16
82	11070	Mathews Dome	rub	sel	ch schist w/ qz, py, lim	<1			<0.2	25	19	74	3	33	16	<0.2	<5	6
83	10553	Mathews Dome	flt	sel	ch schist w/ qz, small py cubes	<5			<0.2	50	24	65	<1	25	16	0.2	<5	12
83	11016	Mathews Dome	otc	sel	qz vein w/ tet, mal, bn (?)	62			5.1	4003	16	29	1	16	8	<0.2	9	<5
83	11017	Mathews Dome	otc	chip	calc schist w/ tet, mal	14			8.1	8631	31	39	2	14	7	<0.2	7	<5
84	10658	Mathews Dome	otc	sel	qz veins w/ tet, mal	9			4.1	5188	5	43	1	17	9	<0.2	<5	<5
85	10927	Oregon Ck		sed		5			<0.2	13	5	58	<1	19	11	<0.2	<5	5
85	10928	Oregon Ck		pan	tr mag, no visible Au	7	5	<1	<0.2	29	3	90	1	34	19	<0.2	<5	<5
86	10929	Oregon Ck		sed		160			<0.2	15	5	57	<1	22	10	<0.2	<5	6
86	10930	Oregon Ck		pan	tr mag, no visible Au	134	<5	<1	<0.2	67	4	98	2	57	21	<0.2	<5	6
87	10922	Agnes Ck		sed		3			<0.2	24	11	92	1	29	13	<0.2	<5	10
87	10923	Agnes Ck		pan	mod rusty sulfides, no visible Au	15	<5	<1	0.6	63	15	118	2	44	21	<0.2	<5	20
87	10924	Agnes Ck	otc	rep	graphitic schist w/ py, cpy (?)	<1			<0.2	20	31	47	2	21	6	<0.2	<5	<5
87	10925	Agnes Ck		sed		3			<0.2	40	10	88	1	30	12	0.2	<5	10
87	10926	Agnes Ck		pan	abu py, no visible Au, no mag	28	<5	<1	<0.2	38	22	115	3	43	22	0.2	<5	44
88	10909	Birch Ck	rub	sel	qz-mica schist w/ py, cpy (?)	35			2.6	88	294	125	7	46	37	7.2	<5	1767
89	10897	Birch Ck		slu	placer con		<70	<70	4.4	105	847	102	2	61	27	0.7	6	581
90	10858	Rue Ck (Birch Ck trib.)		sed		2			<0.2	23	9	81	<1	32	12	<0.2	<5	7
90	10859	Rue Ck (Birch Ck trib.)		pan	taken from cutbank	<1	<5	<1	<0.2	42	14	114	2	61	22	<0.2	<5	16
91	10860	Birch Ck		pan	2 coarse Au	262.98 ppm	<5	<1	7.3	53	10	155	2	79	33	0.4	<5	27
91	10894	Birch Ck	flt	sel	rusty qz veinlets	4			1.3	26	163	32	3	29	10	0.6	<5	96
92	10895	Birch Ck	flt	sel	rusty qz veinlets w/ 1% py	6			<0.2	80	45	107	1	55	22	<0.2	<5	13
92	10896	Birch Ck		sed		4			<0.2	39	14	103	2	39	15	0.4	<5	14
93	10907	Birch Ck	rub	sel	greenschist w/ cpy, diss mag	<1			<0.2	6	<2	41	1	5	27	<0.2	<5	<5
93	10908	Birch Ck	otc	sel	qz-ch schist w/ py cubes, lim	1			<0.2	3	<2	108	2	33	11	<0.2	<5	<5
93	10921	Birch Ck	otc	spac	greenschist w/ 5% mag	<1			<0.2	27	<2	80	2	11	38	<0.2	<5	6
94	10766	Kay Ck		sed		<5			<0.2	21	7	47	<1	21	10	<0.2	<5	8
94	10767	Kay Ck		pan	abu mag, no visible Au	12	<5	<1	<0.2	48	13	53	<1	52	22	<0.2	<5	19
94	10768	Kay Ck	flt	sel	qz-mica schist w/ 10% po	<5			<0.2	4	<2	61	<1	86	31	<0.2	<5	<5
95	10850	Jay Ck	otc	sel	greenschist w/ 3% py, cpy (?)	<1			<0.2	41	6	75	1	9	26	<0.2	<5	<5

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Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
77	11071	<5	0.010	4.03	715	<10	10	28	43	<20	<20	19	0.95	0.96	0.43	<0.01	0.01	13	7	<2	14	<1	<5	<10	0.06	<1
77	11072	<5	0.013	5.43	488	<10	25	168	60	<20	<20	24	1.54	1.44	0.45	0.06	0.10	23	7	<2	21	<1	<5	<10	0.09	<1
78	11019	<5	<0.010	5.11	733	<10	26	143	60	<20	<20	14	1.67	1.62	0.51	0.04	0.09	20	6	<2	23	<1	<5	<10	0.10	<1
79	10910	<5	0.028	3.76	940	<10	29	27	37	<20	<20	17	1.01	1.11	0.87	<0.01	0.04	34	7	<2	20	<1	<5	<10	0.04	<1
79	10911	<5	0.019	4.77	744	<10	31	138	51	<20	<20	25	1.21	1.22	0.59	0.04	0.09	30	6	<2	28	<1	<5	<10	0.08	<1
80	11018	<5	<0.010	7.39	3158	<10	17	71	26	<20	<20	14	1.99	4.20	8.15	0.01	0.08	191	12	<2	35	5	7	<10	<0.01	7
81	10552	<5	0.013	9.02	779	<10	1	83	72	<20	<20	<1	4.45	4.33	0.68	0.01	<0.01	28	<1	4	48	<1	<5	<10	0.28	<1
82	11070	<5	0.022	3.60	510	<10	35	214	50	<20	<20	21	2.44	1.01	0.22	0.03	0.11	11	6	3	24	<1	<5	<10	<0.01	9
83	10553	<5	0.020	3.99	944	<10	31	126	23	<20	<20	6	1.54	1.07	3.68	0.07	0.14	169	8	4	19	<1	<5	<10	0.01	3
83	11016	<5	0.540	1.45	413	<10	10	199	11	<20	<20	2	0.78	0.62	2.63	0.02	0.04	76	6	<2	12	3	<5	<10	<0.01	1
83	11017	<5	1.739	2.22	1152	<10	7	132	5	<20	<20	2	0.24	4.15	7.91	0.05	0.03	190	8	<2	3	6	<5	<10	<0.01	4
84	10658	<5	0.075	1.66	473	<10	14	219	15	<20	<20	2	0.74	0.73	0.84	0.04	0.05	29	2	<2	11	3	<5	<10	<0.01	2
85	10927	<5	0.018	3.89	369	<10	8	23	44	<20	<20	13	0.61	0.68	0.44	<0.01	0.01	16	7	<2	11	<1	<5	<10	0.07	<1
85	10928	<5	0.061	5.40	672	<10	27	157	54	<20	<20	41	1.15	1.20	0.76	0.06	0.10	30	7	<2	21	<1	<5	<10	0.08	<1
86	10929	<5	0.029	3.90	527	<10	14	23	40	<20	<20	19	0.69	0.75	0.65	<0.01	0.01	19	7	<2	13	<1	<5	<10	0.06	<1
86	10930	<5	0.027	5.18	615	<10	62	117	38	<20	<20	51	1.82	1.85	1.53	0.05	0.13	67	7	<2	41	<1	<5	<10	0.04	3
87	10922	<5	0.031	3.37	536	<10	18	21	20	<20	<20	27	1.36	0.80	0.66	<0.01	0.03	19	6	<2	28	<1	<5	<10	<0.01	3
87	10923	<5	0.209	7.16	501	<10	56	174	31	<20	<20	14	2.49	1.19	0.45	0.04	0.15	20	5	<2	50	1	<5	<10	<0.01	9
87	10924	<5	<0.010	2.72	605	<10	46	218	14	<20	<20	10	1.21	0.55	0.86	0.03	0.16	31	3	<2	22	1	<5	<10	<0.01	2
87	10925	<5	0.033	3.28	552	<10	17	18	18	<20	<20	21	1.24	0.79	1.45	<0.01	0.03	40	8	<2	16	<1	<5	<10	<0.01	4
87	10926	<5	0.083	7.93	664	<10	54	152	36	<20	<20	9	2.56	1.19	2.14	0.03	0.15	78	7	<2	49	<1	<5	<10	0.01	9
88	10909	<5	0.408	>10.00	1228	<10	5	57	68	<20	<20	<1	1.82	1.33	2.37	0.04	0.04	94	4	<2	40	<1	11	<10	<0.01	<1
89	10897	<5	0.063	>10.00	611	<10	21	144	115	<20	<20	13	1.34	0.49	0.17	0.03	0.13	12	6	<2	20	<1	<5	<10	<0.01	2
90	10858	<5	0.022	3.09	536	<10	27	23	20	<20	<20	25	1.29	0.62	0.21	<0.01	0.04	9	8	<2	23	<1	<5	<10	<0.01	<1
90	10859	<5	0.017	4.95	696	<10	35	176	28	<20	<20	25	1.73	0.81	0.19	0.02	0.11	9	11	<2	29	<1	<5	<10	<0.01	3
91	10860	<5	3.073	5.45	942	<10	46	157	30	<20	<20	25	2.22	0.95	0.20	0.03	0.15	14	9	<2	37	<1	<5	<10	<0.01	3
91	10894	<5	0.016	1.20	442	<10	48	234	8	<20	<20	9	0.36	0.09	0.21	0.04	0.09	25	4	<2	3	<1	<5	<10	<0.01	<1
92	10895	<5	0.011	4.90	878	<10	4	157	85	<20	<20	23	1.81	1.15	0.45	0.10	0.02	33	6	3	23	<1	10	<10	0.02	<1
92	10896	<5	0.045	3.49	565	<10	29	21	22	<20	<20	27	1.36	0.69	0.42	<0.01	0.04	17	13	<2	28	<1	<5	<10	<0.01	<1
93	10907	<5	<0.010	9.68	921	<10	<1	34	136	<20	<20	5	2.30	1.98	1.85	0.05	<0.01	36	20	3	31	1	7	<10	0.24	<1
93	10908	<5	<0.010	8.17	1702	<10	33	187	52	<20	<20	9	3.60	2.91	3.71	0.01	0.12	40	10	<2	79	<1	6	<10	<0.01	<1
93	10921	<5	<0.010	7.00	759	<10	42	60	239	<20	<20	<1	2.59	2.21	1.53	0.04	0.10	46	5	4	35	<1	<5	<10	0.70	<1
94	10766	<5	0.013	2.44	356	<10	16	18	14	<20	<20	17	0.79	0.56	0.25	<0.01	0.03	6	7	<2	10	1	<5	<10	0.01	<1
94	10767	<5	0.037	>10.00	338	<10	59	225	205	<20	<20	18	1.04	0.67	0.29	0.02	0.06	10	6	<2	13	15	<5	<10	0.14	1
94	10768	<5	<0.010	4.59	403	<10	5	157	81	<20	<20	4	1.84	1.90	1.63	0.04	<0.01	57	4	4	18	6	5	<10	0.29	<1
95	10850	<5	<0.010	6.95	1535	<10	117	44	43	<20	<20	12	1.47	1.70	5.63	0.03	0.33	350	14	<2	21	<1	<5	<10	0.07	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
95	10851	Jay Ck	otc	rep	qz vein w/ euhedral py (< 1cm), cpy	21			<0.2	32	4	18	3	10	10	0.2	<5	82
96	10848	Jay Ck	otc	rep	qz vein w/ tr sulfides	<1			<0.2	13	29	12	2	8	3	<0.2	<5	<5
96	10849	Jay Ck	flt	sel	qtz w/ red stain (glassy texture?)	<1			<0.2	8	18	30	2	9	2	<0.2	<5	<5
96	10852	Jay Ck		sed		15			<0.2	55	16	144	2	43	22	0.6	<5	11
96	10853	Jay Ck		pan	mod mag	9	<5	3	0.4	158	50	110	3	65	32	0.4	<5	45
96	10854	Jay Ck		pan		6	7	1	<0.2	38	18	99	4	37	19	<0.2	<5	16
97	10855	Jay Ck		pan	mod mag, 1 py cube (1 mm)	2	<5	<1	<0.2	30	10	108	2	33	19	<0.2	<5	7
98	10782	Jay Ck		slu	abu mag	0.006 oz/cyd	<70	<70	0.5	31	299	51	2	43	21	<0.2	<5	<5
98	10856	Jay Ck		pan	mod mag, no visible Au	1	8	<1	<0.2	54	20	106	3	35	19	<0.2	<5	7
98	10890	Jay Ck		sed		4			<0.2	30	14	86	2	30	14	0.2	<5	8
98	10891	Jay Ck		pan	no mag	19	<5	<1	<0.2	36	13	116	3	41	20	<0.2	<5	10
98	10892	Jay Ck		sed		2			<0.2	34	12	50	<1	22	11	<0.2	<5	6
98	10893	Jay Ck	flt	sel	marble w/ diss stringer py (1%)	1			1.0	2	9	11	<1	2	1	<0.2	<5	<5
99	10857	Jay Ck	flt	sel	greenstone w/ 3% euhedral py	3			<0.2	125	<2	43	1	11	40	<0.2	<5	6
99	10886	Rye Ck		sed		2			<0.2	17	10	47	<1	14	8	<0.2	<5	6
99	10887	Rye Ck		pan	1fine Au, abu mag, minor py	>10000	<5	<1	0.4	35	64	52	3	30	27	<0.2	<5	15
99	10888	Jay Ck		sed		3			<0.2	36	12	56	<1	21	13	<0.2	<5	<5
99	10889	Jay Ck		pan		182	<5	<1	<0.2	42	15	73	2	24	13	<0.2	<5	6
100	10939	East Ck	flt	sel	qz-rich rock w/ 1% sulfides	<1			1.2	21	22	40	1	19	5	0.6	<5	5
100	10940	East Ck		pan	abu mag	7	<5	5	<0.2	32	4	50	5	16	25	<0.2	<5	5
100	10941	East Ck		sed		3			<0.2	31	6	55	1	19	13	<0.2	<5	9
100	10942	East Ck	flt	sel	fine grained hfls w/ 1% diss po	<1			<0.2	12	3	20	2	15	4	<0.2	<5	11
101	10773	Unnamed Ck	otc	sel	schist w/ 5% py (3mm cubes)	<5			<0.2	154	<2	64	<1	33	27	<0.2	<5	<5
101	10774	Unnamed Ck		sed		<5			<0.2	35	<2	51	<1	11	11	<0.2	<5	5
101	10775	Unnamed Ck		pan	mod mag, minor py, no visible Au	10	<5	<1	<0.2	40	5	62	<1	18	21	<0.2	<5	<5
102	10789	Scofield Ck		sed		<5			<0.2	41	19	77	<1	26	16	<0.2	<5	9
102	10790	Scofield Ck		pan	abu euhedral mag	12	<5	<1	<0.2	57	127	61	<1	23	31	<0.2	<5	26
103	10936	Galena Ck	flt	sel	vein qz w/ gn, cpy, po, apy	1			10.4	140	1545	670	3	8	11	11.0	8	68
103	10937	Galena Ck		sed		8			<0.2	48	24	165	5	52	15	1.3	<5	28
103	10938	Galena Ck		pan	no mag, mod gar (< 3 mm)	11	<5	<1	<0.2	32	14	122	5	43	14	0.7	<5	25
104	8008	Michigan Ck	flt	sel	vein qz w/ gn, ank, sid (?), lim	9			0.84 oz/ton		2.13%	<200	<2	<20	<10	<10		20
104	8009	Michigan Ck	flt	sel	vein qz w/ gn, ank, sid (?)	<5			2.63 oz/ton		4.35%	<200	17	24	<10	<10		35
105	10917	Bourbon Ck		sed		12			<0.2	53	14	107	2	55	19	0.6	<5	15
105	10918	Bourbon Ck		pan	tr fine gold (?), no mag	62	<5	<1	0.3	42	8	70	3	35	15	0.2	<5	7
105	10919	Bourbon Ck	otc	rep	calc-mica schist w/ diss po, py, cpy	<1			0.3	48	5	80	2	40	14	0.3	<5	17
105	10920	Fall Ck	flt	sel	hfls (?) w/ po bands	3			0.8	84	13	87	4	37	11	1.2	<5	<5

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
95	10851	<5	0.021	2.72	353	<10	11	231	1	<20	<20	1	0.11	0.12	1.40	0.02	0.03	24	5	<2	<1	<1	<5	<10	<0.01	<1
96	10848	<5	0.011	0.63	146	<10	8	311	4	<20	<20	<1	0.17	0.08	0.07	0.01	0.02	3	2	<2	2	<1	<5	<10	<0.01	<1
96	10849	<5	<0.010	0.97	138	<10	14	280	3	<20	<20	1	0.36	0.16	0.04	<0.01	0.03	2	2	<2	6	<1	<5	<10	<0.01	<1
96	10852	<5	0.061	5.30	1785	<10	68	22	39	<20	<20	27	1.52	0.99	1.03	<0.01	0.09	35	17	<2	23	<1	<5	<10	0.01	<1
96	10853	<5	0.096	8.28	554	<10	53	187	62	<20	<20	18	1.45	0.99	5.06	0.03	0.12	192	13	<2	23	<1	<5	<10	0.08	3
96	10854	<5	0.019	8.64	648	<10	58	251	84	<20	<20	24	1.43	0.80	0.48	0.03	0.14	20	9	<2	22	1	<5	<10	0.06	2
97	10855	<5	0.012	8.47	571	<10	40	198	72	<20	<20	18	1.78	1.02	0.31	0.02	0.15	16	8	<2	34	<1	<5	<10	0.07	<1
98	10782	<5	0.240	>10.00	226	<10	<1	66	471	<20	<20	6	0.04	<0.01	0.02	<0.01	<0.01	4	2	<2	<1	<1	<5	<10	0.03	4
98	10856	<5	0.018	8.57	790	<10	43	191	76	<20	<20	24	1.76	1.07	0.81	0.03	0.19	27	12	<2	32	<1	<5	<10	0.07	<1
98	10890	<5	0.018	2.88	414	<10	20	18	15	<20	<20	25	0.99	0.55	0.23	<0.01	0.04	10	12	<2	20	<1	<5	<10	<0.01	<1
98	10891	<5	0.025	4.76	657	<10	46	213	25	<20	<20	24	1.85	0.97	0.24	0.03	0.18	14	14	<2	37	<1	<5	<10	0.03	2
98	10892	<5	0.017	2.12	660	<10	27	8	9	<20	<20	23	0.58	0.44	1.07	<0.01	0.10	22	12	<2	11	<1	<5	<10	<0.01	<1
98	10893	<5	<0.010	0.66	177	<10	35	19	2	<20	<20	1	0.13	1.52	>10.00	<0.01	0.10	1192	5	<2	3	<1	<5	<10	0.01	1
99	10857	<5	0.012	6.33	717	<10	<1	50	132	<20	<20	<1	3.42	3.27	1.54	0.01	<0.01	41	<1	<2	40	2	6	<10	0.16	<1
99	10886	<5	0.017	2.15	470	<10	21	9	14	<20	<20	18	0.62	0.85	2.40	<0.01	0.06	74	8	<2	8	<1	<5	<10	0.02	<1
99	10887	<5	0.103	>10.00	349	<10	52	119	200	<20	<20	9	0.67	0.93	5.33	0.01	0.08	194	8	<2	9	2	<5	<10	0.05	<1
99	10888	<5	0.016	2.59	639	<10	18	9	14	<20	<20	25	0.78	0.80	2.26	<0.01	0.06	68	13	<2	16	<1	<5	<10	0.02	<1
99	10889	<5	0.034	4.45	523	<10	34	157	27	<20	<20	18	1.28	0.98	4.15	0.02	0.15	204	12	<2	25	<1	<5	<10	0.05	<1
100	10939	<5	<0.010	1.61	330	<10	79	38	9	<20	<20	7	0.59	1.09	>10.00	0.02	0.12	531	12	<2	9	<1	<5	<10	<0.01	<1
100	10940	<5	0.021	>10.00	891	<10	8	70	1029	<20	<20	4	0.41	0.18	0.35	<0.01	0.02	8	8	<2	2	8	<5	<10	0.10	<1
100	10941	<5	<0.010	2.82	584	<10	30	18	35	<20	<20	9	1.12	1.47	1.60	<0.01	0.06	27	7	<2	11	<1	<5	<10	0.05	<1
100	10942	<5	<0.010	1.41	175	<10	110	276	21	<20	<20	4	0.88	0.41	0.76	0.03	0.24	52	7	<2	6	<1	<5	<10	0.16	2
101	10773	<5	<0.010	6.55	976	<10	2	99	194	<20	<20	6	2.93	2.56	6.36	0.01	<0.01	161	13	8	17	13	27	<10	0.09	<1
101	10774	<5	<0.010	2.64	449	<10	35	10	37	<20	<20	8	0.91	1.89	3.84	<0.01	0.14	42	5	<2	8	3	<5	<10	0.07	<1
101	10775	<5	<0.010	7.60	792	<10	52	76	169	<20	<20	8	1.77	1.75	4.07	0.05	0.07	76	9	3	11	12	5	<10	0.27	<1
102	10789	<5	<0.010	3.35	710	<10	49	12	32	<20	<20	14	0.97	0.82	1.21	<0.01	0.08	27	10	<2	13	3	<5	<10	0.04	1
102	10790	<5	0.019	>10.00	2096	<10	117	101	822	<20	<20	19	0.87	0.31	0.82	0.01	0.03	16	23	<2	5	58	10	<10	0.14	2
103	10936	23	0.244	2.27	102	<10	23	320	<1	<20	<20	2	0.03	<0.01	0.10	<0.01	0.01	4	<1	<2	<1	<1	<5	<10	<0.01	1
103	10937	<5	0.038	3.29	492	<10	53	12	16	<20	<20	27	0.69	0.54	0.86	<0.01	0.06	30	15	<2	11	<1	<5	<10	0.01	<1
103	10938	<5	0.039	3.97	649	<10	350	221	21	<20	<20	21	1.19	0.62	1.10	0.02	0.11	37	15	<2	16	<1	<5	<10	0.06	<1
104	8008	42.7		<0.5		<20	<100	520		<200	<2	<5				<0.05							<0.5	<1		<500
104	8009	118.0		<0.5		<20	<100	680		<200	<2	<5				<0.05							<0.5	<1		<500
105	10917	<5	0.061	4.19	487	<10	50	16	21	<20	<20	31	0.97	0.81	1.04	<0.01	0.06	31	18	<2	17	<1	<5	<10	0.01	<1
105	10918	<5	0.021	3.97	609	<10	31	135	17	<20	<20	14	0.94	1.31	7.28	0.03	0.13	306	13	<2	20	<1	<5	<10	0.02	<1
105	10919	<5	<0.010	4.26	710	<10	25	69	31	<20	<20	11	1.49	1.72	9.31	0.03	0.13	424	18	<2	40	<1	<5	<10	0.02	<1
105	10920	<5	<0.010	2.18	212	<10	230	39	41	<20	<20	9	0.76	0.60	5.66	0.03	0.20	225	10	<2	12	<1	<5	<10	0.14	20

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
105	10943	Fall Ck	flt	sel	hfls w/ 2% po	<1			0.4	40	2	33	2	47	31	<0.2	<5	<5
105	10944	Fall Ck	flt	sel	rusty qz vein w/ apy (?)	11			<0.2	9	21	19	3	7	5	<0.2	<5	<5
106	10969	Fall Ck		sed		5			<0.2	38	11	78	2	35	13	0.2	<5	10
106	10970	Fall Ck		pan	no mag, no visible Au	3	<5	<1	0.4	33	7	81	3	36	14	<0.2	<5	13
107	10823	LaRowe Ck		sed		<5			<0.2	32	9	77	<1	39	16	0.3	<5	8
107	10824	LaRowe Ck		pan	no mag, no visible Au	<5	<5	<1	<0.2	28	9	74	2	38	16	0.2	<5	15
107	10825	LaRowe Ck		pan	no mag, no visible Au	<5	<5	<1	<0.2	23	5	81	2	36	15	0.2	<5	6
107	10826	LaRowe Ck	otc	sel	qz-mica schist w/ 2% po and hem	5			0.3	160	37	47	2	54	19	0.7	<5	<5
108	10794	Horse Ck		sed		<5			<0.2	44	10	141	1	86	40	0.6	<5	22
108	10795	Horse Ck		pan	minor mag, no visible Au	12	<5	<1	<0.2	48	44	108	3	76	39	0.6	<5	31
109	10791	LaSalle Ck		sed		10			<0.2	62	13	141	1	74	32	0.7	<5	20
109	10792	LaSalle Ck		pan	abu mag, minor py and cpy	18	<5	<1	<0.2	47	20	90	<1	42	25	0.3	<5	36
109	10793	LaSalle Ck	flt	sel	micaceous qtz w/ diss py (5%), gar	<5			<0.2	157	3	33	1	16	9	<0.2	<5	15
110	10812	Lode and Behold		sed		<5			<0.2	28	9	70	<1	23	11	0.2	<5	9
110	10813	Lode and Behold		pan	no mag, no visible Au	18	<5	<1	<0.2	28	9	77	1	36	12	<0.2	<5	8
110	10814	Lode and Behold	flt	sel	phyllite w/ diss py, lim	12			0.6	294	11	22	40	47	5	<0.2	<5	59
110	10815	Cinco Mining		sed		<5			<0.2	41	10	68	<1	25	13	<0.2	<5	8
111	10798	Ruby Ck		sed		6			<0.2	46	6	65	<1	35	21	<0.2	<5	11
111	10799	Ruby Ck		pan		42	<5	<1	<0.2	44	11	66	1	31	19	<0.2	<5	19
112	10796	Ipnek Ck (Ice Worm)		sed		<5			<0.2	28	14	69	<1	22	11	0.3	<5	7
112	10797	Ipnek Ck (Ice Worm)		pan		9	<5	<1	<0.2	37	31	75	<1	25	19	<0.2	<5	10
113	8020	Conglomerate Ck		pan	2 pan comp, no visible Au	250	<5	2	<5			210	<2	42	25	<10		22
113	10819	Cinco Mining		pan	no mag, no visible Au	<5	<5	<1	<0.2	20	5	65	<1	22	10	<0.2	<5	<5
113	10820	Cinco Mining		pan	no mag, no visible Au	6	<5	<1	<0.2	43	8	73	<1	25	13	<0.2	<5	7
114	10816	Cinco Mining		pan	mod py, tr mag, no visible Au	18	<5	<1	<0.2	107	23	86	<1	33	20	<0.2	<5	23
114	10817	Cinco Mining		pan	no mag, no visible Au	8	<5	<1	<0.2	31	5	74	<1	25	13	<0.2	<5	6
114	10818	Cinco Mining		pan	no mag, no visible Au	24	<5	<1	<0.2	32	8	76	<1	26	13	<0.2	<5	7
115	10800	Bonanza		sed		<5			<0.2	26	13	87	<1	25	15	<0.2	<5	8
115	10801	Bonanza		pan	tr mag	24	<5	<1	<0.2	41	15	100	<1	35	19	<0.2	<5	12
116	10821	Tinayguk Ck		sed		<5			<0.2	29	12	124	1	33	11	0.7	<5	8
116	10822	Tinayguk Ck		pan	no mag, no visible Au	8	<5	<1	<0.2	14	8	66	1	22	6	0.3	<5	<5
117	10865	Pass Ck		sed		6			0.2	36	13	146	5	36	11	1.1	<5	11
117	10866	Pass Ck		pan	no mag, no visible Au	11	<5	<1	<0.2	31	6	96	3	47	15	0.5	<5	8
118	10880	Bonanza Ck	otc	cont	qz vein w/ sid (?)	<5			<0.2	10	<2	104	<1	10	4	<0.2	<5	20
118	10881	Bonanza Ck	flt	sel	qz veinlets w/ tr gn, sl, sid, ank	10			9.7	284	3438	3510	1	7	3	3.1	77	3772
119	10677	Mascot Ck		pan	1 fine Au (?), 1 fine Ag (?)	10			0.3	93	42	125	2	56	32	<0.2	7	54

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
105	10943	<5	<0.010	3.68	280	<10	61	90	37	<20	<20	6	1.46	1.09	1.27	0.05	0.13	96	8	<2	17	<1	<5	<10	0.36	<1
105	10944	<5	<0.010	1.40	25	<10	39	207	6	<20	<20	16	0.19	0.02	0.26	0.07	0.05	12	14	<2	<1	2	<5	<10	0.09	4
106	10969	<5	0.036	3.14	411	<10	25	10	14	<20	<20	14	0.68	0.74	3.37	<0.01	0.07	91	11	<2	11	<1	<5	<10	<0.01	<1
106	10970	<5	<0.010	4.15	410	<10	33	126	22	<20	<20	10	1.22	0.98	8.93	0.03	0.13	212	9	<2	21	<1	<5	<10	0.04	2
107	10823	<5	<0.010	2.84	336	<10	18	18	19	<20	<20	16	0.86	0.70	1.57	<0.01	0.03	58	12	<2	17	2	<5	<10	0.02	2
107	10824	<5	0.026	4.08	680	<10	74	163	31	<20	<20	13	1.58	0.77	0.90	0.03	0.16	40	16	2	23	3	6	<10	0.08	5
107	10825	<5	0.017	3.50	435	<10	85	165	32	<20	<20	15	1.57	0.92	0.89	0.04	0.18	42	11	3	26	3	<5	<10	0.07	5
107	10826	<5	0.039	4.91	1166	<10	27	93	11	<20	<20	18	0.68	0.99	>10.00	0.01	0.04	619	19	<2	15	<1	<5	<10	<0.01	1
108	10794	<5	0.017	3.08	770	<10	25	14	20	<20	<20	62	1.01	0.60	0.99	<0.01	0.04	35	45	<2	16	2	<5	<10	0.03	1
108	10795	<5	0.118	7.82	3296	<10	76	225	46	<20	<20	46	2.42	0.51	1.23	0.02	0.11	22	68	<2	18	4	29	<10	0.11	4
109	10791	<5	0.018	4.50	896	<10	33	23	31	<20	<20	79	1.51	1.08	1.21	<0.01	0.07	46	49	3	25	3	<5	<10	0.04	<1
109	10792	<5	<0.010	7.50	1641	<10	40	132	60	<20	<20	20	1.61	0.71	1.27	0.03	0.13	38	29	2	19	5	13	<10	0.09	3
109	10793	<5	<0.010	1.82	185	<10	18	176	14	<20	<20	5	0.82	0.47	0.31	0.03	0.13	14	3	<2	16	1	<5	<10	0.08	1
110	10812	<5	0.024	3.17	960	<10	29	13	17	<20	<20	11	0.95	0.95	3.22	<0.01	0.03	92	7	<2	22	1	<5	<10	0.01	3
110	10813	<5	0.024	4.03	1194	<10	76	88	33	<20	<20	12	1.58	1.07	2.75	0.02	0.14	102	8	3	30	2	<5	<10	0.04	5
110	10814	11	0.885	1.58	24	<10	71	208	70	<20	<20	2	0.20	0.02	0.06	<0.01	0.08	5	2	<2	<1	6	<5	<10	<0.01	7
110	10815	<5	0.016	3.28	1269	<10	20	15	18	<20	<20	12	1.04	0.91	1.34	<0.01	0.04	48	6	<2	19	1	<5	<10	0.02	2
111	10798	<5	<0.010	3.66	882	<10	21	21	27	<20	<20	21	1.40	1.00	0.32	<0.01	0.06	11	8	3	22	2	<5	<10	0.03	<1
111	10799	<5	<0.010	7.02	2118	<10	51	171	53	<20	<20	19	2.11	0.84	0.78	0.03	0.13	13	42	3	21	4	19	<10	0.10	2
112	10796	<5	<0.010	2.70	509	<10	14	14	27	<20	<20	18	0.92	0.64	0.78	<0.01	0.03	21	8	<2	10	2	<5	<10	0.02	<1
112	10797	<5	<0.010	>10.00	1013	<10	45	122	358	<20	<20	12	1.63	0.79	0.96	0.03	0.10	26	16	<2	14	26	8	<10	0.16	2
113	8020	2.5		7.4		<20	860	140		<200	<2	49				1.40							17.0	<1		<500
113	10819	<5	<0.010	4.13	1273	<10	33	76	30	<20	<20	12	1.79	1.46	1.71	0.02	0.17	60	6	4	27	2	<5	<10	0.02	3
113	10820	<5	0.016	4.81	1314	<10	80	92	33	<20	<20	12	1.98	1.53	1.27	0.02	0.20	56	6	4	30	3	<5	<10	0.03	3
114	10816	<5	0.033	6.66	1542	<10	66	79	45	<20	<20	10	2.00	1.59	1.63	0.02	0.17	69	6	4	32	4	<5	<10	0.05	4
114	10817	<5	<0.010	4.64	1440	<10	51	58	31	<20	<20	12	1.91	1.54	1.36	0.02	0.13	55	6	3	31	3	<5	<10	0.03	3
114	10818	<5	0.016	4.79	1362	<10	42	78	32	<20	<20	12	1.97	1.56	1.71	0.02	0.17	66	6	4	32	3	<5	<10	0.02	3
115	10800	<5	0.023	3.93	1171	<10	22	18	22	<20	<20	13	1.30	0.86	0.44	<0.01	0.05	21	5	2	28	2	<5	<10	<0.01	2
115	10801	<5	0.015	5.99	1503	<10	65	151	46	<20	<20	17	2.12	1.20	0.45	0.04	0.26	23	6	4	43	4	<5	<10	0.02	6
116	10821	<5	0.116	3.29	515	<10	138	17	25	<20	<20	10	0.97	1.14	2.23	<0.01	0.05	34	10	<2	18	2	<5	<10	<0.01	3
116	10822	<5	0.070	2.14	383	<10	176	120	23	<20	<20	6	0.82	0.46	0.55	0.01	0.11	21	5	<2	13	2	<5	<10	<0.01	5
117	10865	<5	0.096	3.19	457	<10	162	23	30	<20	<20	10	1.28	0.84	0.63	<0.01	0.05	34	6	<2	24	3	<5	<10	0.02	3
117	10866	<5	0.027	4.32	607	<10	555	101	48	<20	<20	11	2.19	1.51	0.57	0.01	0.09	23	4	3	32	4	<5	<10	0.02	6
118	10880	<5	0.023	3.79	3124	<10	4	74	2	<20	<20	6	0.02	3.79	9.12	0.01	<0.01	152	4	<2	5	<1	<5	<10	<0.01	<1
118	10881	<5	5.681	3.19	1762	<10	2	151	2	<20	<20	4	0.24	1.98	5.30	0.14	<0.01	111	3	<2	4	<1	<5	<10	<0.01	<1
119	10677	<5	0.343	8.65	1488	<10	38	74	38	<20	<20	17	2.28	1.8	0.46	0.01	0.16	45	5	3	41	<1	<5	<10	0.02	4

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
119	10678	Mascot Ck		sed		<5			0.2	38	16	93	1	29	17	<0.2	<5	21
120	10667	Mascot Ck	otc	sel	siliceous mdst w/ 3-5% py	<5			<0.2	43	28	18	3	21	12	<0.2	<5	24
120	10679	Mascot Ck	flt	sel	qz veinlets xcut schist w/ gn (?)	<5			1.2	<1	39	19	1	8	2	<0.2	<5	221
121	10680	Mascot Ck		pan	minor blk sand, nonmagnetic	36			0.2	25	16	119	1	35	19	<0.2	<5	<5
121	10681	Mascot Ck		sed		<5			0.2	28	14	103	<1	29	17	<0.2	<5	<5
122	10682	Mascot Ck	otc	rand	mdst w/ <1% py, lim	<5			<0.2	47	45	8	4	17	4	0.2	<5	315
123	10655	Mascot Ck		sed		<5			0.4	33	16	92	1	28	16	<0.2	<5	33
123	10683	Mascot Ck		pan	3 mm py cubes, no mag	253			<0.2	66	14	87	1	44	27	<0.2	<5	31
124	10656	Mascot Ck	otc	rand	meta mdst w/ 1-2% diss py	<5			0.3	121	28	11	4	33	16	<0.2	<5	24
124	10657	Mascot Ck	otc	rand	schistose qtz w/ <1% diss py	6			<0.2	95	21	15	2	57	35	<0.2	<5	30
125	10710	Mascot Ck		pan	no mag	7364			1.2	65	55	96	2	37	18	<0.2	7	36
125	10711	Mascot Ck		sed		<5			0.2	48	17	89	2	36	17	<0.2	<5	9
126	10712	Mascot Ck	otc	sel	phyllite w/ py concretions	7			0.4	89	38	61	1	33	13	<0.2	<5	14
127	10713	Mascot Ck	otc	sel	graphitic schist w/ py cubes	<5			<0.2	48	15	109	3	41	22	<0.2	<5	22
128	10716	Mascot Ck		pan		1145			0.7	110	65	93	<1	51	41	<0.2	<5	54
128	10717	Mascot Ck		sed		<5			0.3	40	14	79	<1	30	17	<0.2	<5	19
129	10714	No. 1 Pup		pan	no mag, 1 py cube (3mm)	424.57 ppm			50.6	40	105	122	2	42	23	<0.2	<5	51
129	10715	No. 1 Pup		sed		<5			0.2	29	14	103	2	30	15	<0.2	<5	11
130	10668	Mascot Ck		plac	abu coarse Au, abu sulfides	1.08 oz/cyd			1.7	166	52	89	11	58	77	0.7	6	306
131	10671	Discovery Pup	otc	rand	qz musc schist w/ diss po	<5			<0.2	21	6	24	2	26	18	<0.2	<5	10
131	10672	Discovery Pup	flt	sel	massive qz w/ <1% py, po, tr gn	<5			1.4	31	256	8	2	28	8	0.3	<5	6
131	10673	Discovery Pup	flt	sel	brecciated mdst w/ qz, py, gn	<5			1.3	1	363	28	1	10	3	<0.2	<5	10
132	10669	Discovery Pup		pan		10			<0.2	44	33	109	2	36	18	0.2	<5	21
132	10670	Discovery Pup		sed		<5			0.2	39	13	83	2	27	15	<0.2	<5	19
133	10721	Mascot Ck	flt	sel	granitic, igneous rock w/ gn, py	<5			4.2	4	2315	138	1	10	<1	0.7	<5	<5
134	11304	Mascot Ck	otc	sel	graphitic schist w/ 2% py	23			0.9	34	44	32	3	22	11	<0.2	<5	21
135	10722	O'Neil Ck		pan	no mag	312			<0.2	36	12	75	1	31	13	<0.2	<5	12
135	10723	O'Neil Ck		sed		<5			<0.2	29	10	53	<1	20	11	<0.2	<5	8
136	10724	Mascot Ck	flt	sel	porphyritic andesite w/ < 1% po	<5			0.3	68	21	56	2	26	17	<0.2	<5	<5
137	11303	Mascot Ck	otc	sel	mica-qz schist w/ 1% py	<5			0.3	33	19	31	<1	21	11	<0.2	<5	6
138	8019	Mascot Ck		pan	cupola buttons, Hg (?), blk sands	>10000			>300			<2200	<340	<570	<37	<460		<39
139	11285	Knorr Ck		sed		<5			<0.2	30	10	61	<1	25	14	<0.2	<5	10
139	11286	Knorr Ck		pan	1 v fine nuggety Au	3831	7	8	0.9	57	7	88	2	38	14	<0.2	<5	11
139	11301	Knorr Ck	flt	sel	blk phyllite w/ 5% py stringers	11			0.8	48	18	15	72	52	4	<0.2	<5	75
139	11302	Knorr Ck	flt	sel	green tuff w/ sulfides, amph, feld	<5			0.2	67	<2	50	<1	58	23	<0.2	<5	<5
140	8017	Mascot Ck	flt	grab	qz-carb vein w/ cpy, py, ba, ank	<5			<5			<200	6	75	49	<10		3

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
119	10678	<5	0.067	3.61	1370	<10	83	19	25	<20	<20	15	1.42	1.16	4.12	0.02	0.07	803	6	2	26	<1	<5	<10	0.02	2
120	10667	10	0.048	2.71	360	<10	52	133	21	<20	<20	9	1.06	0.50	0.21	0.02	0.18	10	3	<2	17	<1	<5	<10	<0.01	9
120	10679	7	0.012	3.83	1925	<10	7	41	8	<20	<20	3	0.10	6.04	>10.00	0.01	0.07	408	4	<2	8	7	<5	<10	<0.01	<1
121	10680	<5	0.107	6.07	1279	<10	562	78	41	<20	<20	16	2.54	2.15	0.27	0.01	0.14	20	5	4	36	1	<5	<10	0.03	2
121	10681	<5	0.059	4.28	1184	<10	25	25	31	<20	<20	23	1.75	1.43	0.38	<0.01	0.06	26	8	2	33	<1	<5	<10	0.02	2
122	10682	7	0.070	2.09	134	<10	96	148	14	<20	<20	13	0.59	0.20	0.09	0.02	0.17	13	3	<2	7	<1	<5	<10	<0.01	13
123	10655	<5	0.036	3.99	1420	<10	50	21	27	<20	<20	19	1.52	1.27	0.79	<0.01	0.07	42	7	<2	27	<1	<5	<10	0.02	2
123	10683	<5	0.279	6.42	1419	<10	57	83	35	<20	<20	14	2.07	1.67	0.43	0.02	0.15	31	5	<2	30	<1	<5	<10	0.03	3
124	10656	20	0.127	2.42	204	<10	62	121	15	<20	<20	9	0.77	0.28	0.24	0.03	0.21	12	4	<2	10	<1	<5	<10	<0.01	17
124	10657	17	0.054	3.37	3223	<10	68	111	16	<20	<20	8	0.79	0.79	1.22	0.03	0.23	39	3	<2	11	<1	<5	<10	<0.01	9
125	10710	<5	0.101	5.78	1428	<10	388	80	34	<20	21	16	2.19	1.72	0.87	0.02	0.17	58	6	5	33	<1	<5	<10	0.02	4
125	10711	<5	0.039	3.99	1264	<10	27	19	24	<20	<20	20	1.44	1.18	1.81	<0.01	0.05	252	7	<2	29	<1	<5	<10	0.01	2
126	10712	8	0.079	4.44	706	<10	33	70	14	<20	<20	5	1.33	1.41	6.00	0.02	0.26	292	10	<2	27	2	<5	<10	<0.01	3
127	10713	6	0.055	6.90	1600	<10	30	91	40	<20	<20	7	2.82	1.91	1.72	0.03	0.23	56	9	4	74	1	<5	<10	<0.01	3
128	10716	<5	0.126	8.81	1490	<10	20	71	34	<20	<20	17	2.07	1.71	0.84	0.01	0.14	46	6	2	32	<1	<5	<10	0.02	3
128	10717	<5	0.043	3.70	1271	<10	56	19	24	<20	<20	19	1.36	1.20	1.39	<0.01	0.05	163	7	<2	24	<1	<5	<10	0.02	2
129	10714	<5	3.453	5.98	1447	<10	156	129	29	<20	<20	20	1.83	1.41	0.4	0.02	0.17	29	5	<2	35	1	<5	<10	0.03	5
129	10715	<5	0.060	3.52	1521	<10	34	16	18	<20	<20	19	1.13	0.95	0.42	<0.01	0.04	25	6	<2	27	<1	<5	<10	0.01	2
130	10668	6	0.192	>10.00	911	<10	2	143	18	<20	24	2	1.38	0.81	0.49	0.03	0.27	16	7	<2	24	<1	<5	<10	0.04	3
131	10671	7	0.012	4.03	1810	<10	156	61	18	<20	<20	9	1.12	1.63	2.76	0.03	0.19	94	8	<2	22	1	<5	<10	<0.01	2
131	10672	96	0.012	1.72	1129	<10	3	234	1	<20	<20	<1	0.06	0.62	1.94	<0.01	0.02	111	7	<2	1	<1	<5	<10	<0.01	1
131	10673	7	0.017	3.58	3626	<10	5	69	5	<20	<20	4	0.09	3.79	9.08	0.03	0.04	168	6	<2	2	3	<5	<10	<0.01	1
132	10669	<5	0.124	6.26	1506	<10	102	68	35	<20	<20	16	2.24	1.89	0.81	0.01	0.13	47	5	3	36	<1	<5	<10	0.03	2
132	10670	<5	0.024	3.72	1302	<10	16	18	23	<20	<20	21	1.31	1.21	0.71	<0.01	0.05	43	8	2	24	<1	<5	<10	0.02	2
133	10721	7	0.406	5.37	4966	<10	>2000	54	24	<20	<20	2	0.59	5.57	>10.00	<0.01	0.01	>2000	7	<2	2	4	<5	<10	<0.01	1
134	11304	<5	0.080	3.18	281	<10	24	112	15	<20	<20	9	0.69	0.53	0.23	0.02	0.15	9	4	<2	8	<1	<5	<10	<0.01	14
135	10722	<5	0.061	4.56	1035	<10	54	98	30	<20	<20	16	1.90	1.72	0.29	0.02	0.14	18	5	2	23	<1	<5	<10	0.02	3
135	10723	<5	0.019	2.44	755	<10	15	13	14	<20	<20	14	0.87	0.82	0.29	<0.01	0.03	21	5	2	13	<1	<5	<10	0.02	1
136	10724	<5	0.073	5.24	1018	<10	30	70	174	<20	<20	6	4.78	1.64	6.12	0.03	0.05	87	13	<2	21	6	12	<10	0.28	9
137	11303	<5	0.027	3.10	1147	<10	36	61	7	<20	<20	10	0.48	1.27	2.76	0.02	0.28	69	6	<2	5	<1	<5	<10	<0.01	<1
138	8019	314.0	4.299	<11.0		<3200	<4700	<6500			<59	36				2.10							19.0	<5		
139	11285	<5	0.012	3.18	1021	<10	15	18	19	<20	<20	16	1.19	0.87	0.61	<0.01	0.05	29	8	<2	17	<1	<5	<10	0.01	<1
139	11286	<5	0.205	5.68	1181	<10	91	324	59	<20	<20	29	3.02	1.87	0.40	0.09	0.57	25	8	5	33	<1	5	<10	0.06	<1
139	11301	<5	0.104	1.36	18	<10	21	142	57	<20	<20	9	0.31	0.05	0.13	0.01	0.17	8	4	<2	2	<1	<5	<10	<0.01	18
139	11302	<5	0.020	5.58	717	<10	24	72	134	<20	<20	2	5.29	2.92	3.92	0.03	0.07	44	8	6	34	<1	7	<10	0.17	<1
140	8017	2.9		6.4		<20	<100	190		<200	<2	<5				0.24							4.2	<1		<500

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
140	8018	Mascot Ck	flt	grab	vein qtz w/ py/po, apy bands	32			<5			<200	<3	47	75	<10		3130
140	11305	Mascot Ck		slu	pyrite crystals from Mascot Ck	0.27 ppm	<70	<70	<0.2	45	24	28	4	92	537	<0.2	<5	15
140	11306	Mascot Ck	flt	sel	qtz cobbles w/ 1% apy, 4% py	10			<0.2	7	4	3	<1	23	57	5.4	<5	2527
141	10867	Washington Ck		sed		<5			<0.2	31	10	76	<1	24	14	<0.2	<5	11
141	10868	Washington Ck		pan	tr py, no visible Au	<5	<5	<1	<0.2	37	6	93	<1	31	17	<0.2	<5	12
141	10869	Washington Ck		sed		<5			<0.2	28	10	85	<1	27	16	<0.2	<5	6
141	10870	Washington Ck		pan	no visible Au	12	<5	<1	<0.2	34	8	90	<1	32	18	<0.2	<5	8
142	10871	Washington Ck		sed		<5			<0.2	34	7	77	<1	25	15	<0.2	<5	6
142	10872	Washington Ck		pan	tr mag, no visible Au	12	<5	<1	<0.2	34	7	102	<1	31	19	<0.2	<5	6
142	10873	Washington Ck		sed		<5			<0.2	32	10	88	<1	27	16	<0.2	<5	17
142	10874	Washington Ck		pan	tr py, no visible Au	<5	<5	<1	<0.2	36	8	91	<1	30	17	<0.2	<5	16
143	11176	Vermont Dome	otc	sel	ch phyllite w/ py	6			<0.2	33	16	107	<1	52	33	<0.2	<5	<5
144	11178	Vermont Dome	otc	sel	meta qz w/ py-hem psuedo	<5			0.2	19	62	19	7	18	4	<0.2	<5	<5
145	11177	Vermont Dome	otc	sel	meta qz	<5			0.7	5	15	9	<1	3	1	<0.2	<5	<5
146	11179	Vermont Dome	otc	sel	qz vein w/ sid	<5			0.4	20	52	9	<1	5	4	<0.2	<5	<5
147	11344	Vermont Dome	flt	sel	qz float	<5			0.9	25	355	11	2	11	3	<0.2	<5	<5
148	11345	Vermont Dome	flt	rand	vein qz	<5			<0.2	41	16	4	2	10	2	<0.2	<5	<5
149	11346	Vermont Dome	flt	rand	vein qz	<5			0.4	262	116	24	3	25	11	<0.2	<5	<5
150	11347	Vermont Dome	flt	rand	vein qz	<5			<0.2	15	<2	6	1	11	4	<0.2	<5	<5
151	10653	Vermont Ck	otc	rand	phyllite w/ siliceous nodules, lim	<5			<0.2	13	14	83	1	28	16	<0.2	<5	15
152	10654	Vermont Ck	flt	sel	massive qz w/ lim	<5			<0.2	14	31	14	2	10	4	<0.2	<5	8
153	11275	Muck Pup		sed		7			<0.2	30	7	55	<1	21	14	<0.2	<5	81
153	11276	Muck Pup		pan	1 fine and 2 v fine Au	95.28 ppm	<70	<70	4.5	23	9	83	2	30	16	<0.2	<5	633
153	11277	Muck Pup		plac	3 fine and 5 v fine Au	0.0008 oz/cyd	<70	<70	<0.2	31	12	82	2	33	16	<0.2	<5	17
153	11278	Muck Pup		plac	2 v fine Au, tr mag	0.07 ppm	<70	<70	<0.2	40	12	73	1	28	17	<0.2	<5	13
153	11279	Muck Pup		plac	3 coarse, 4 fine, 6 v fine Au flakes	0.006 oz/cyd	<70	<70	1.9	38	16	78	2	31	18	<0.2	<5	678
154	11348	Hammond River	otc	sel	qz vein w/ py and other sulfides	93			<0.2	155	96	45	<1	59	34	0.4	<5	161
155	10652	Slisco Bench	flt	sel	meta qz cobbles w/ lim	<5			0.5	4	7	8	3	9	1	<0.2	<5	6
156	11307	Vermont Ck	otc	sel	mica-qz schist w/ <5% py	<5			<0.2	81	11	11	4	18	10	<0.2	<5	31
157	11396	Vermont Ck	otc	sel	qz vein w/ carbonate, lim	17			<0.2	4	3	27	3	34	10	0.5	<5	103
158	11397	Vermont Ck	otc	rand	qz veinlets w/ sid, hem (?), py	78			0.3	10	13	41	3	19	5	0.2	<5	55
159	10735	Vermont Ck		sed		<5			0.2	35	12	66	2	28	16	<0.2	<5	10
159	10736	Vermont Ck		pan		398			<0.2	56	11	79	<1	31	16	<0.2	<5	23
160	10734	Right Fork	otc	rand	phyllite w/ py	29			<0.2	77	8	84	2	42	22	<0.2	<5	51
160	11175	Right Fork	otc	sel	micaceous schist w/ euhedral py	73			<0.2	87	5	86	2	30	18	1.6	<5	799
161	10732	Right Fork		pan		5993			0.3	81	23	84	2	57	30	<0.2	<5	369

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
140	8018	4.1		4.1		<54	<100	250		<450	<2	<5				0.12							1.9	<1		<500
140	11305	<5	0.047	>10.00	48	<10	<1	120	6	<20	<20	3	0.13	0.03	0.04	<0.01	0.05	3	2	<2	<1	<1	<5	<10	<0.01	6
140	11306	<5	0.015	2.67	24	<10	10	138	1	<20	<20	1	0.08	0.02	0.01	<0.01	0.04	1	<1	<2	<1	<1	<5	<10	<0.01	<1
141	10867	<5	0.016	4.35	1141	<10	12	18	24	<20	<20	15	1.31	1.02	0.81	<0.01	0.03	40	8	2	30	2	<5	<10	<0.01	2
141	10868	<5	0.013	6.03	940	<10	60	111	37	<20	<20	9	2.24	1.47	0.55	0.02	0.19	32	5	4	51	3	<5	<10	<0.01	4
141	10869	<5	0.018	4.45	1050	<10	16	22	26	<20	<20	14	1.56	1.11	0.51	<0.01	0.04	24	7	2	32	3	<5	<10	<0.01	1
141	10870	<5	0.015	5.85	1192	<10	75	137	35	<20	<20	11	2.14	1.38	0.36	0.03	0.21	24	5	4	48	3	<5	<10	<0.01	3
142	10871	<5	<0.010	4.32	871	<10	10	22	29	<20	<20	16	1.48	1.12	0.64	<0.01	0.04	32	7	3	29	2	<5	<10	0.02	1
142	10872	<5	0.014	6.09	934	<10	65	96	46	<20	<20	8	2.34	1.58	0.43	0.02	0.17	28	5	5	48	4	<5	<10	0.02	2
142	10873	<5	0.016	4.69	1408	<10	14	21	26	<20	<20	15	1.56	1.02	0.61	<0.01	0.04	31	7	3	36	2	<5	<10	<0.01	2
142	10874	<5	0.011	5.63	862	<10	60	94	31	<20	<20	9	2.04	1.29	0.37	0.02	0.17	23	4	4	47	3	<5	<10	<0.01	4
143	11176	<5	0.010	6.89	1405	<10	42	80	30	<20	<20	19	3.20	1.47	0.13	0.03	0.23	9	12	5	64	<1	<5	<10	<0.01	<1
144	11178	<5	<0.010	3.11	1674	<10	7	235	2	<20	<20	<1	0.07	0.81	2.14	<0.01	0.03	225	7	<2	1	<1	<5	<10	<0.01	<1
145	11177	<5	<0.010	1.32	7054	<10	18	11	3	<20	<20	3	0.24	0.57	>10.00	<0.01	0.04	1747	18	<2	3	<1	<5	<10	<0.01	<1
146	11179	6	<0.010	1.55	3333	<10	7	47	6	<20	<20	4	0.28	0.43	>10.00	<0.01	0.02	990	5	<2	3	<1	<5	<10	<0.01	<1
147	11344	<5	<0.010	1.74	2320	<10	3	190	1	<20	<20	1	0.04	0.74	2.57	<0.01	<0.01	112	4	<2	<1	<1	<5	<10	<0.01	1
148	11345	<5	<0.010	0.65	157	<10	4	349	2	<20	<20	<1	0.07	0.03	0.18	<0.01	0.01	7	1	<2	1	<1	<5	<10	<0.01	2
149	11346	<5	<0.010	2.93	2340	<10	9	207	9	<20	<20	4	0.57	0.61	2.73	0.01	0.03	124	7	<2	10	<1	<5	<10	<0.01	2
150	11347	<5	<0.010	1.46	1310	<10	5	196	2	<20	<20	1	0.06	0.54	2.35	<0.01	0.01	135	8	<2	<1	<1	<5	<10	<0.01	2
151	10653	18	0.043	6.06	1928	<10	31	78	60	<20	<20	14	2.19	2.59	3.89	0.02	0.18	131	8	<2	33	2	6	<10	0.05	2
152	10654	36	0.023	1.33	1153	<10	10	212	5	<20	<20	3	0.25	0.52	1.90	0.01	0.04	67	5	<2	5	<1	<5	<10	<0.01	<1
153	11275	<5	0.020	3.15	724	<10	23	19	31	<20	<20	10	1.18	0.88	0.53	<0.01	0.06	26	7	2	15	<1	<5	<10	0.02	<1
153	11276	<5	1.160	5.51	1165	<10	67	294	80	<20	<20	9	2.43	1.47	0.82	0.09	0.30	35	10	5	27	<1	7	<10	0.11	<1
153	11277	<5	0.440	4.53	1100	<10	52	187	47	<20	<20	5	1.35	0.94	1.53	0.02	0.13	51	6	<2	20	<1	<5	<10	0.06	<1
153	11278	<5	0.063	5.20	1604	<10	33	108	47	<20	<20	10	1.68	1.48	2.99	0.03	0.16	133	11	3	22	<1	<5	<10	0.06	<1
153	11279	<5	0.630	5.48	1125	<10	57	213	61	<20	<20	9	1.90	1.37	1.22	0.03	0.17	48	9	3	23	<1	<5	<10	0.08	<1
154	11348	24	0.321	5.27	17637	<10	20	155	7	<20	<20	4	0.29	1.91	5.88	<0.01	0.06	365	13	<2	5	<1	<5	<10	<0.01	2
155	10652	27	0.026	0.76	332	<10	8	137	2	<20	<20	2	0.14	0.34	7.27	<0.01	0.02	210	3	<2	2	<1	<5	<10	<0.01	<1
156	11307	<5	0.036	1.04	554	<10	51	127	9	<20	<20	7	0.27	0.08	0.13	0.02	0.16	11	1	<2	2	<1	<5	<10	<0.01	3
157	11396	11	0.045	4.26	3064	<10	13	160	9	<20	<20	<1	0.49	2.44	6.00	0.01	0.10	640	13	<2	10	<1	6	<10	<0.01	<1
158	11397	9	0.066	3.13	1901	<10	11	174	8	<20	<20	2	0.56	1.53	4.29	0.01	0.06	338	9	<2	11	<1	<5	<10	<0.01	<1
159	10735	<5	0.029	3.56	1731	<10	11	17	22	<20	<20	19	1.19	1.15	0.72	<0.01	0.03	43	7	<2	20	<1	<5	<10	0.02	1
159	10736	<5	0.063	5	1545	<10	27	74	34	<20	<20	17	1.96	1.7	0.7	0.01	0.12	40	5	<2	28	<1	<5	<10	0.03	2
160	10734	14	0.069	5.83	1835	<10	46	65	46	<20	<20	11	3.02	2.25	0.90	0.02	0.25	60	5	4	36	2	<5	<10	<0.01	2
160	11175	8	0.018	5.85	2286	<10	51	65	36	<20	<20	15	2.33	1.75	1.46	0.02	0.28	93	10	3	27	<1	<5	<10	<0.01	<1
161	10732	11	0.285	5.82	4667	<10	120	91	24	<20	<20	15	0.83	0.82	0.89	0.02	0.13	54	6	<2	12	<1	<5	<10	<0.01	3

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
161	10733	Right Fork		sed		14			<0.2	36	13	66	1	32	17	<0.2	<5	54
162	11283	Friday the 13th Pup	flt	sel	phyllite w/ 2% euhedral py	13			<0.2	29	4	75	<1	30	13	<0.2	<5	70
163	10731	Friday the 13th Pup	flt	grab	phyllite w/ py	38			0.3	33	18	63	<1	25	9	<0.2	<5	149
164	10727	Friday the 13th Pup	otc	grab	qz veinlets w/ py, po, lim	**1790**			0.2	22	29	32	2	19	7	0.3	<5	412
164	10728	Friday the 13th Pup	otc	grab	qz veinlet w/ py, po (?), apy (?)	521			<0.2	11	22	77	4	23	8	0.3	<5	368
164	10729	Friday the 13th Pup	otc	sel	qz lense in phyllite w/ stb	6			1.3	<1	1657	269	<1	6	3	0.9	<5	15
164	10730	Friday the 13th Pup	otc	grab	qz veinlet	63.56 ppm			3.9	6	114	23	6	25	5	<0.2	<5	183
165	11267	Friday the 13th Pup		sed		<5			<0.2	25	9	52	<1	24	13	<0.2	<5	24
165	11268	Friday the 13th Pup		pan	minor py and mag	1750	9	7	<0.2	63	20	88	4	59	29	0.5	<5	199
166	11284	Friday the 13th Pup	otc	ran	qz veinlet	**26.07 ppm**			<0.2	7	154	31	<1	17	4	0.3	<5	126
167	11264	Right Fork	otc	ran	qz veinlet	2948			0.9	56	34	29	<1	15	5	0.3	<5	181
167	11265	Right Fork	otc	ran	qz veinlet w/ 5% py	415			<0.2	12	112	14	<1	9	4	9.1	<5	3802
167	11266	Right Fork	otc	ran	qz veinlet w/ 1% py, visible Au	**17.82 ppm**			4.4	16	24	32	<1	21	5	0.6	<5	289
168	11263	Right Fork	otc	sel	qz veinlet w/ minor hem and py	9			<0.2	59	23	52	<1	23	16	<0.2	<5	54
169	11160	Nolan Ck	otc	ran	meta qz	<5			0.3	11	19	21	2	19	6	<0.2	<5	<5
170	11159	Nolan Ck	otc	ran	folded meta qz	<5			<0.2	13	34	10	4	19	4	<0.2	<5	<5
171	11087	Nolan Ck		sed		3			<0.2	29	3	59	<1	25	16	<0.2	<5	8
171	11088	Nolan Ck		pan		14.99 ppm	2	<5	0.8	39	15	112	2	29	17	<0.2	<5	13
172	11089	Vermont Pass		sed		6			<0.2	30	5	67	1	28	18	<0.2	<5	10
172	11206	Vermont Pass		pan		47	2	6	<0.2	72	6	170	4	48	23	<0.2	<5	15
173	11123	Montana Gulch		sed		2			<0.2	39	6	67	1	31	19	<0.2	<5	17
173	11124	Montana Gulch		pan	mod po and py, minor mag	10	3	<5	<0.2	94	9	121	3	46	33	<0.2	<5	42
174	11392	Montana Mountain	flt	sel	vein qz w/ sid, hem	<5			<0.2	4	10	32	2	5	4	<0.2	<5	<5
175	11378	Acme Ck	otc	sel	meta qz	6			0.4	25	85	17	2	12	3	<0.2	<5	<5
176	11090	Acme Ck		sed		4			<0.2	30	10	57	1	26	15	<0.2	<5	7
176	11091	Acme Ck		pan	tr mag, no visible Au	25	3	<5	<0.2	47	<2	139	3	33	16	<0.2	<5	9
177	8035	Nolan Ck, Silverado		slu	placer con	>10000			31			<390	38	390	130	<50		100
177	10674	Nolan Ck, Silverado		slu	py cubes from sluice con	20			0.2	38	59	5	4	102	425	<0.2	<5	99
177	10675	Nolan Ck, Silverado		slu	py concretions from sluice con	79			5.0	137	136	23	47	144	33	0.7	<5	294
178	10747	Smith Ck	trn	sel	stb vein in schist	12.20 ppm			<0.2	22	<2	33	<1	<1	2	1.8	<5	295
178	11372	Smith Ck	otc	sel	qz vein w/ stb	1804			<0.2	16	<2	34	<1	<1	3	5.2	<5	1365
179	11280	Smith Ck	otc	sel	qz veinlets w/ 50% Sb, 10% sid	9836			<0.2	69	<2	51	<1	<1	5	2.3	<5	924
180	10748	Smith Ck	drum	sel	massive stb w/ yellow alt mineral	577			0.6	13	<2	3	<1	<1	<1	4.7	<5	15
181	10749	Smith Ck	otc	rep	qz-musc schist w/ tr py, lim	8			<0.2	64	15	75	3	35	20	<0.2	<5	40
182	10725	Smith Ck	pit	sel	1.5 " stb vein w/ val	1115			<0.2	40	<2	44	<1	<1	2	2.6	<5	16
182	10726	Smith Ck	otc	sel	qz veinlet w/ ank margins	151			0.6	26	8	32	2	11	5	0.5	<5	702

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
161	10733	<5	0.085	2.82	2234	<10	23	10	13	<20	<20	14	0.63	0.55	0.55	<0.01	0.03	37	5	<2	11	<1	<5	<10	<0.01	1
162	11283	7	0.064	3.99	821	<10	39	37	12	<20	<20	10	1.00	1.55	3.96	0.02	0.27	135	5	<2	18	<1	<5	<10	<0.01	<1
163	10731	20	0.111	3.52	1173	<10	36	40	8	<20	<20	11	0.58	1.44	5.28	0.02	0.27	211	8	<2	6	<1	<5	<10	<0.01	2
164	10727	748	0.057	2.08	959	<10	34	161	5	<20	<20	10	0.31	0.86	2.99	0.02	0.21	85	5	<2	2	<1	<5	<10	<0.01	2
164	10728	46	0.075	1.27	2017	<10	5	202	2	<20	<20	<1	0.05	0.55	1.25	<0.01	0.02	68	2	<2	<1	<1	<5	<10	<0.01	2
164	10729	61	0.339	4.82	>20000	<10	8	77	<1	<20	<20	5	0.07	2.68	9.92	0.01	0.04	509	10	<2	1	2	<5	<10	<0.01	<1
164	10730	62	1.359	0.73	401	<10	15	252	1	<20	<20	2	0.07	0.12	0.78	0.01	0.04	41	2	<2	<1	<1	<5	<10	<0.01	1
165	11267	<5	0.054	2.68	1777	<10	22	13	16	<20	<20	14	0.84	0.53	0.32	<0.01	0.04	21	6	<2	12	<1	<5	<10	<0.01	<1
165	11268	<5	0.173	5.67	5504	<10	145	424	41	<20	<20	12	1.80	0.79	0.69	0.08	0.42	59	8	3	19	<1	<5	<10	0.02	<1
166	11284	80	0.128	0.69	208	<10	10	211	2	<20	<20	1	0.06	0.07	0.31	0.01	0.03	26	2	<2	<1	<1	<5	<10	<0.01	<1
167	11264	20	0.100	1.29	535	<10	28	161	3	<20	<20	2	0.19	0.61	1.99	0.02	0.11	61	3	<2	1	<1	<5	<10	<0.01	<1
167	11265	33	0.023	1.42	799	<10	22	127	1	<20	<20	<1	0.06	0.38	1.26	0.01	0.03	36	2	<2	<1	<1	<5	<10	<0.01	<1
167	11266	7	0.795	1.40	818	<10	14	149	2	<20	<20	1	0.14	0.42	1.73	0.01	0.07	63	3	<2	1	<1	<5	<10	<0.01	<1
168	11263	10	0.032	3.16	3532	<10	44	107	13	<20	<20	10	1.01	1.11	1.79	0.03	0.18	132	5	<2	16	<1	<5	<10	<0.01	<1
169	11160	<5	<0.010	1.34	439	<10	29	207	12	<20	<20	<1	0.58	0.32	3.37	0.02	0.16	158	3	<2	7	<1	<5	<10	0.05	<1
170	11159	<5	0.018	0.69	714	<10	14	310	4	<20	<20	1	0.20	0.16	0.22	0.01	0.04	8	<1	<2	2	<1	<5	<10	<0.01	<1
171	11087	<5	0.026	3.66	1098	<10	14	20	28	<20	<20	13	1.33	0.93	0.39	<0.01	0.06	23	8	<2	22	<1	<5	<10	0.01	<1
171	11088	<5	0.350	5.05	2843	<10	169	258	74	<20	<20	11	2.51	1.35	0.77	0.12	0.37	39	17	3	27	<1	10	<10	0.22	<1
172	11089	<5	0.046	4.00	2085	<10	27	26	40	<20	<20	11	1.47	1.11	0.56	<0.01	0.07	36	8	<2	17	1	<5	<10	0.01	<1
172	11206	<5	0.036	4.38	6650	<10	150	424	45	<20	<20	14	2.13	0.89	0.29	0.11	0.40	32	18	3	15	<1	8	<10	0.04	<1
173	11123	<5	0.034	3.96	1945	<10	20	21	29	<20	<20	10	1.41	1.02	0.40	<0.01	0.06	26	6	<2	22	<1	<5	<10	<0.01	<1
173	11124	<5	0.038	5.51	5896	<10	110	255	55	<20	<20	14	2.57	1.33	0.57	0.08	0.49	36	13	3	24	<1	8	<10	0.05	<1
174	11392	<5	<0.010	7.27	5641	<10	<1	61	1	<20	<20	1	0.03	3.29	9.44	<0.01	0.01	616	35	<2	1	<1	8	<10	<0.01	<1
175	11378	62	0.012	0.59	171	<10	17	280	1	<20	<20	<1	0.09	0.04	0.07	<0.01	0.02	2	<1	<2	<1	<1	<5	<10	<0.01	<1
176	11090	<5	0.035	3.66	994	<10	11	23	30	<20	<20	16	1.43	1.17	0.82	<0.01	0.04	40	8	<2	19	<1	<5	<10	0.02	<1
176	11091	<5	0.046	5.22	1664	<10	134	247	77	<20	<20	12	3.33	1.68	0.86	0.16	0.67	54	12	5	30	<1	10	<10	0.15	<1
177	8035	196.0		>10.0		<200	520	760		<2000	445	11				<0.12							3.3	<1		<1500
177	10674	19	0.073	>10.00	45	<10	<1	111	2	<20	<20	3	0.17	0.02	0.06	<0.01	0.07	5	2	<2	<1	<1	<5	<10	<0.01	4
177	10675	91	0.010	>10.00	59	<10	<1	74	<1	<20	<20	<1	0.04	0.03	0.09	<0.01	0.02	3	<1	<2	<1	<1	<5	<10	<0.01	2
178	10747	15.83%	1.049	1.17	1077	<10	24	97	<1	<20	<20	2	0.17	0.49	0.93	<0.01	0.08	57	3	<2	<1	<1	<5	<10	<0.01	<1
178	11372	2000	0.234	1.30	1088	<10	18	138	3	<20	<20	1	0.13	0.53	1.42	<0.01	0.06	122	2	<2	<1	<1	<5	<10	<0.01	<1
179	11280	42.42%	0.457	1.08	912	<10	<1	69	2	<20	<20	<1	0.06	0.68	1.89	<0.01	0.02	163	2	<2	<1	<1	<5	<10	<0.01	<1
180	10748	66.41%	0.465	0.08	30	<10	4	20	<1	40	56	<1	0.02	0.02	0.15	<0.01	<0.01	15	<1	<2	<1	<1	<5	<10	<0.01	<1
181	10749	30	0.127	4.12	2252	<10	30	107	16	<20	<20	7	0.96	1.07	1.10	0.02	0.19	53	5	<2	12	<1	<5	<10	<0.01	7
182	10725	41.28%	0.175	1.51	715	<10	16	60	<1	<20	28	<1	0.21	0.62	0.52	<0.01	0.12	22	2	<2	1	<1	<5	<10	<0.01	<1
182	10726	483	0.100	3.93	3746	<10	15	78	7	<20	<20	4	0.23	3.72	8.80	0.02	0.09	510	11	<2	2	3	<5	<10	<0.01	2

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
182	11402	Smith Ck	otc	sel	qz vein w/ stb, carbonate	1716			<0.2	4	3	21	<1	<1	1	5.9	<5	1207
182	11403	Smith Ck	otc	rand	qz veinlets w/ stb, carbonate	393			0.3	7	7	35	2	7	2	2.0	<5	441
182	11404	Smith Ck	otc	sel	qz vein w/ stb, carbonate	501			0.4	10	<2	30	<1	<1	<1	2.3	<5	51
183	10746	Smith Ck	otc	rep	qz-musc schist w/ lim	7			<0.2	54	21	60	1	18	9	<0.2	<5	64
184	11163	Smith Ck	otc	sel	blk schist w/ euhedral py	13			<0.2	72	22	58	4	44	18	<0.2	<5	23
184	11164	Smith Ck	otc	sel	qz vein	463			<0.2	6	3	67	4	12	2	2.4	<5	1028
184	11165	Smith Ck	otc	ran	qz veins w/ sulfides, Sb	1532			<0.2	30	43	41	3	17	8	12.3	<5	5772
185	11166	Smith Ck	otc	ran	qz veins w/ sulfides, Sb	1958			<0.2	23	29	25	7	13	4	9.0	<5	3933
185	11167	Smith Ck	otc	sel	meta qtz w/ euhedral py	14			1.3	22	359	4004	7	20	6	16.9	<5	54
186	10743	Smith Ck	otc	rep	qz vein xcut qz-mica schist	<5			0.4	34	6	65	1	12	11	<0.2	<5	89
187	10744	Smith Ck		pan	minor mag, no visible Au	22			<0.2	45	14	63	2	45	20	<0.2	7	57
187	10745	Smith Ck		sed		<5			<0.2	23	11	57	1	25	12	<0.2	<5	15
188	10742	Smith Creek Dome	otc	sel	schistose qtz w/ py, mal (?)	9			<0.2	62	17	17	10	25	9	<0.2	<5	153
189	10720	Smith Creek Dome	otc	sel	qz-musc schist w/ py cubes, lim	2234			7.2	171	3500	95	4	44	28	0.3	23	123
189	10741	Smith Creek Dome	otc	sel	qz vein cutting qz-mica schist	46			<0.2	47	23	39	2	16	9	<0.2	<5	47
190	10718	Smith Creek Dome	otc	sel	schistose qtz w/ tr py, lim	<5			<0.2	27	178	65	114	45	5	0.7	<5	81
191	11158	Smith Creek Dome	otc	sel	meta qz w/ py	11			<0.2	10	<2	33	2	16	10	<0.2	<5	12
192	11247	Smith Dome Bench		soil	0.025 cubic yards, schist-rich soil	2.33 ppm	<70	<70	<0.2	41	14	92	1	34	22	<0.2	<5	111
193	10764	Smith Dome Bench		soil	probable contamination	387.62 ppm			83.7	161	>10000	73	2	69	50	<0.2	135	737
194	11144	Swede Channel		pan	1 fine and 1 coarse Au, mod py	217.63 ppm	3	<5	6.1	58	10	161	5	38	27	<0.2	<5	58
195	11068	Archibald Ck		sed		5			<0.2	32	7	53	<1	30	18	<0.2	<5	21
195	11069	Archibald Ck		pan	tr mag, no visible Au	14	3	<5	<0.2	107	7	223	3	41	22	<0.2	<5	34
196	11168	Archibald Ck	otc	sel	qz veinlet within blk py schist	27			0.3	14	5	15	5	20	3	<0.2	<5	37
197	11116	Nolan Ck	otc	ran	qz veinlets xcut phyllite	4			0.2	93	36	51	4	29	12	<0.2	<5	26
198	11379	Nolan Ck	otc	rand	qz veinlets in graphitic schist	37			0.3	17	10	13	4	11	1	<0.2	<5	14
199	11117	Nolan Ck		pan	1 fine and 12 v fine Au, no mag	11740	1	<5	5.1	43	32	115	3	31	18	<0.2	<5	38
199	11118	Nolan Ck		sed		2			<0.2	25	4	55	<1	23	15	<0.2	<5	15
200	11119	Nolan Ck	flt	grab	diorite w/ tr po	3			0.2	89	<2	39	1	41	21	<0.2	<5	<5
201	11120	Nolan Ck	flt	grab	diorite w/ <1% fine py, lim	2			<0.2	126	<2	58	1	25	26	<0.2	<5	<5
202	11121	Webster Gulch		pan	no mag	26	<1	<5	<0.2	30	<2	106	2	23	17	<0.2	<5	42
202	11122	Webster Gulch		sed		4			<0.2	27	7	72	<1	25	17	<0.2	<5	59
203	11261	Right Fork		sed		<5			<0.2	37	14	82	<1	45	18	<0.2	<5	16
203	11262	Right Fork		pan	tr mag, tr py	43	6	7	<0.2	40	13	155	3	42	20	<0.2	<5	24
204	11259	Right Fork		sed		<5			<0.2	18	10	53	<1	21	12	<0.2	<5	24
204	11260	Right Fork		pan	abu euhedral mag	40	6	7	<0.2	50	13	78	4	57	23	<0.2	<5	51
205	11281	Right Fork	otc	sel	qz veinlets w/ 50 % ca	6			0.5	28	44	43	<1	19	6	<0.2	<5	17

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
182	11402	>2000	0.066	1.22	961	<10	5	109	3	<20	<20	<1	0.12	0.85	2.12	0.01	0.05	147	4	<2	<1	<1	<5	<10	<0.01	<1
182	11403	169	0.079	3.42	1550	<10	14	144	8	<20	<20	<1	0.33	3.31	7.12	0.02	0.13	623	7	<2	1	<1	<5	<10	<0.01	<1
182	11404	>2000	0.153	0.81	661	<10	3	43	1	<20	32	<1	0.06	0.71	1.45	<0.01	0.02	87	2	<2	<1	<1	<5	<10	<0.01	<1
183	10746	22	0.135	4.29	3232	<10	60	38	15	<20	<20	19	0.65	1.79	2.33	0.03	0.30	154	6	<2	5	<1	<5	<10	<0.01	1
184	11163	9	0.052	3.66	1830	<10	51	108	16	<20	<20	4	0.93	1.00	0.96	0.03	0.20	52	3	<2	15	<1	<5	<10	<0.01	<1
184	11164	>2000	0.124	1.05	727	<10	14	272	3	<20	<20	<1	0.11	0.76	1.71	<0.01	0.02	172	2	<2	<1	<1	<5	<10	<0.01	<1
184	11165	>2000	0.079	1.47	1201	<10	21	246	4	<20	<20	2	0.22	0.49	1.15	0.01	0.08	95	2	<2	1	1	<5	<10	<0.01	<1
185	11166	>2000	0.068	1.15	266	<10	18	249	4	<20	<20	2	0.21	0.15	0.26	0.01	0.07	53	<1	<2	2	<1	<5	<10	<0.01	1
185	11167	48	5.685	1.40	867	<10	7	397	1	<20	<20	<1	0.06	0.16	0.34	0.02	0.02	16	<1	<2	<1	<1	<5	<10	<0.01	<1
186	10743	42	0.125	4.52	1613	<10	22	86	8	<20	<20	7	0.27	2.71	6.76	0.02	0.15	619	11	<2	1	1	<5	<10	<0.01	1
187	10744	15	0.16	7.96	2252	<10	44	114	53	<20	<20	21	0.70	0.34	0.12	0.01	0.10	20	5	<2	6	1	<5	<10	<0.01	3
187	10745	10	0.192	2.27	1363	<10	28	13	15	<20	<20	15	0.71	0.53	0.13	<0.01	0.03	24	5	<2	9	<1	<5	<10	<0.01	<1
188	10742	46	0.057	0.96	288	<10	35	174	3	<20	<20	5	0.18	0.08	0.05	0.01	0.09	9	1	<2	2	<1	<5	<10	<0.01	3
189	10720	156	0.920	3.79	3371	<10	248	150	7	<20	<20	9	0.43	0.50	0.51	0.01	0.27	66	3	<2	4	<1	<5	<10	<0.01	2
189	10741	31	0.168	2.34	2096	<10	112	122	8	<20	<20	15	0.49	0.56	0.47	<0.01	0.18	89	4	<2	3	<1	<5	<10	<0.01	2
190	10718	9	0.483	1.23	171	<10	89	211	8	<20	<20	3	0.33	0.07	0.01	0.01	0.11	5	2	<2	3	<1	<5	<10	<0.01	6
191	11158	<5	0.226	1.23	2133	<10	88	230	3	<20	<20	<1	0.12	0.49	1.09	<0.01	0.08	106	3	<2	2	<1	<5	<10	<0.01	<1
192	11247	96	0.230	5.79	1354	<10	63	207	80	<20	<20	9	2.01	1.26	1.11	0.08	0.19	70	8	5	29	<1	9	<10	0.01	<1
193	10764	199	IS	>10.00	1226	33	9	129	35	38	37	56	1.12	0.84	1.13	0.02	0.11	65	7	3	13	<1	<5	<10	0.01	4
194	11144	25	3.220	6.67	2924	<10	110	309	54	<20	<20	9	1.95	0.82	1.20	0.11	0.38	56	13	<2	21	<1	7	<10	0.07	<1
195	11068	18	0.038	2.60	1837	<10	18	12	16	<20	<20	8	0.81	0.62	0.43	<0.01	0.04	27	6	<2	11	<1	<5	<10	0.01	<1
195	11069	45	0.035	5.15	3968	<10	118	364	52	<20	<20	9	2.10	0.96	0.58	0.14	0.36	33	15	2	21	<1	9	<10	0.1	<1
196	11168	150	0.095	0.94	71	<10	18	393	5	<20	<20	3	0.20	0.01	0.04	<0.01	0.06	10	<1	<2	1	<1	<5	<10	<0.01	4
197	11116	6	0.016	2.02	2211	<10	26	260	9	<20	<20	3	0.41	0.69	0.94	0.03	0.11	61	2	<2	5	<1	<5	<10	<0.01	<1
198	11379	27	0.086	0.84	99	<10	21	200	8	<20	<20	5	0.19	0.09	0.04	0.03	0.08	10	1	<2	1	<1	<5	<10	<0.01	5
199	11117	11	0.770	5.01	3965	<10	107	293	78	<20	<20	14	2.58	1.25	0.79	0.15	0.42	40	20	4	24	<1	11	<10	0.19	<1
199	11118	<5	0.026	3.27	1362	<10	16	19	30	<20	<20	10	1.15	0.86	0.40	<0.01	0.06	24	6	<2	17	<1	<5	<10	0.02	<1
200	11119	<5	<0.010	3.77	625	<10	17	94	74	<20	<20	<1	3.12	1.69	2.21	0.05	0.04	25	8	3	20	<1	<5	<10	0.24	<1
201	11120	<5	<0.010	4.43	632	<10	25	67	95	<20	<20	3	2.18	1.33	1.17	0.06	0.03	30	11	<2	14	<1	<5	<10	0.29	<1
202	11121	<5	0.024	4.52	1775	<10	89	208	91	<20	<20	9	2.22	1.32	1.00	0.17	0.28	55	14	3	20	<1	10	<10	0.2	<1
202	11122	<5	0.046	3.56	1382	<10	23	21	42	<20	<20	8	1.22	0.95	0.56	<0.01	0.06	34	5	<2	15	<1	<5	<10	0.02	<1
203	11261	<5	0.050	3.13	1490	<10	17	10	9	<20	<20	14	0.65	0.48	0.67	<0.01	0.04	31	7	<2	15	<1	<5	<10	<0.01	<1
203	11262	<5	0.105	4.79	3897	<10	187	405	47	<20	<20	12	1.80	0.76	1.18	0.13	0.46	77	8	3	20	<1	5	<10	<0.01	<1
204	11259	<5	0.023	2.20	2681	<10	14	8	10	<20	<20	15	0.59	0.40	1.06	<0.01	0.03	35	6	<2	9	<1	<5	<10	<0.01	<1
204	11260	<5	0.090	5.64	3974	<10	134	585	47	<20	<20	11	1.96	0.63	1.45	0.13	0.53	81	10	3	21	<1	6	<10	0.01	<1
205	11281	161	0.047	2.14	822	<10	25	66	6	<20	<20	3	0.52	0.80	>10.00	0.02	0.14	733	16	<2	10	<1	<5	<10	<0.01	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
205	11282	Right Fork	flt	sel	phyllite w/ 2% euhedral py	10			0.3	38	8	65	<1	33	11	<0.2	<5	47
206	10649	Thompson headwaters	flt	sel	massive qz w/ py, po	<5			<0.2	6	<2	10	2	13	3	<0.2	<5	23
207	10647	Thompson headwaters	otc	rand	qz veinlets in phyllite w/ lim	186			0.4	55	13	22	5	20	6	<0.2	<5	73
207	10648	Thompson headwaters	otc	rand	qz veinlet in phyllite w/ lim	122			<0.2	78	20	142	3	62	27	0.5	<5	294
208	11060	Thompson Pup	flt	sel	multiple phase alt qz w/ lim	4			0.4	2	31	50	1	16	10	<0.2	<5	7
208	11207	Thompson Pup	otc	cont	qz veinlet w/ apy	152			<0.2	23	<2	49	2	20	10	1.2	<5	434
208	11214	Thompson Pup	flt	sel	ch schist w/ 5% py, po	65			<0.2	60	31	44	4	47	33	2.1	<5	683
208	11215	Thompson Pup	otc	sel	4.0 ft-wide qz vein w/ py, po, ch	30			0.4	116	12	76	4	32	19	2.3	<5	765
208	11360	Thompson Pup	otc	sel	qz vein	<5			<0.2	17	26	21	3	19	8	<0.2	<5	61
208	11361	Thompson Pup	otc	sel	qz vein w/ py, lim	<5			<0.2	13	<2	12	1	9	3	<0.2	<5	<5
209	11395	Thompson Pup	flt	sel	vein qz w/ sid, py	9			<0.2	7	7	21	2	10	3	<0.2	<5	16
210	11208	Thompson Pup	flt	sel	vein qz (?) w/ tr cpy (?)	12			<0.2	3062	11	79	2	21	26	0.8	<5	191
211	11362	Thompson Pup	otc	sel	qz vein	6			<0.2	10	<2	11	4	16	3	<0.2	<5	52
212	11363	Thompson Pup	otc	rand	qz vein	<5			<0.2	13	8	26	1	11	6	<0.2	<5	36
213	11061	Thompson Pup	flt	sel	qtz cobble w/ 3% py, cpy (?), lim	25			<0.2	3059	20	88	1	6	8	0.3	<5	46
213	11364	Thompson Pup	otc	sel	qz vein	13			<0.2	12	<2	35	1	32	10	0.4	<5	113
214	11062	Thompson Pup		sed		82			<0.2	33	7	45	1	22	15	<0.2	<5	65
214	11063	Thompson Pup		pan	4 v fine Au, minor mag	15.80 ppm	3	7	3.2	108	25	262	6	44	23	1.1	<5	374
215	11365	Thompson Pup	otc	rand	qz vein w/ py, apy	17			<0.2	11	4	20	2	14	6	<0.2	<5	51
215	11366	Thompson Pup	otc	rand	qz vein w/ py, lim	8			<0.2	20	12	26	2	20	8	<0.2	<5	36
215	11367	Thompson Pup	otc	rand	qz vein	83			<0.2	24	45	74	1	20	11	<0.2	<5	41
215	11368	Thompson Pup	otc	sel	meta qz	38			<0.2	14	<2	<1	4	19	3	<0.2	<5	18
216	10676	Thompson Pup		slu	apy xls from sluice con	1964			99.9	35	>10000	4	6	258	122	275.3	228	>10000
216	11064	Thompson Pup	otc	rep	multiple phase qz vein	9			0.7	3	<2	37	2	2	2	<0.2	<5	94
216	11065	Thompson Pup		pan	apy con	IS	IS	IS	0.3	42	17	141	7	245	393	406.2	<5	>10000
216	11213	Thompson Pup	flt	sel	silicified schist w/ py, po, sid	11			<0.2	4768	8	108	<1	7	7	0.3	<5	28
217	11155	Fay Ck	otc	sel	phyllite w/ euhedral py	4			<0.2	43	8	50	2	31	23	<0.2	<5	15
217	11209	Fay Ck	otc	ran	qz veinlet w/ 10% sid, tr cpy, sl, stb	7			<0.2	43	213	49	2	23	11	<0.2	<5	19
217	11210	Fay Ck	otc	sel	1.1 ft-wide qz vein w/ stb, gn, py	16			0.3	117	59	25	2	41	20	<0.2	<5	25
217	11211	Fay Ck	otc	sel	qz vein margin w/ py, po, tr stb, cpy	60			1	170	1033	23	3	100	58	0.4	6	163
218	11156	Fay Ck	otc	sel	folded qtz w/ abu py	7			<0.2	83	22	52	4	66	39	<0.2	<5	32
219	11157	Fay Ck	otc	sel	meta qz w/ sulfides	40			0.2	18	16	23	2	14	9	<0.2	<5	90
219	11212	Fay Ck	otc	sel	phyllite w/ 5% po	26			0.2	102	60	53	5	61	37	<0.2	<5	35
220	11066	Fay Ck		sed		4			<0.2	29	7	43	1	26	16	<0.2	<5	30
220	11067	Fay Ck		pan	1 fine Au, from bedrock	1120	3	<5	<0.2	49	5	130	3	26	11	<0.2	<5	100
221	11369	Fay Ck	otc	sel	qz vein w/ py, lim	44			<0.2	18	45	64	<1	15	8	<0.2	<5	35

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
205	11282	16	0.034	3.58	658	<10	31	47	11	<20	<20	6	1.04	1.21	5.52	0.02	0.22	309	9	<2	20	<1	<5	<10	<0.01	<1
206	10649	372	0.062	0.69	515	<10	13	290	2	<20	<20	1	0.08	0.02	0.10	<0.01	0.04	10	<1	<2	2	<1	<5	<10	<0.01	1
207	10647	0.35%	0.358	1.64	3452	<10	76	234	3	<20	<20	5	0.20	0.62	1.42	<0.01	0.10	113	4	<2	2	<1	<5	<10	<0.01	2
207	10648	204	0.116	2.72	4992	<10	70	155	5	<20	<20	8	0.41	0.18	1.01	0.01	0.12	72	11	<2	5	<1	<5	<10	<0.01	2
208	11060	<5	<0.010	4.49	10454	<10	12	71	6	<20	<20	1	0.05	5.78	>10.00	0.01	0.03	351	5	<2	3	<1	<5	<10	<0.01	<1
208	11207	5	0.148	2.03	2925	<10	87	180	8	<20	<20	6	0.38	0.37	0.77	0.02	0.17	41	3	<2	4	<1	<5	<10	<0.01	<1
208	11214	19	0.093	2.73	9418	<10	94	161	4	<20	<20	3	0.30	0.73	2.52	0.01	0.21	102	4	<2	2	<1	<5	<10	<0.01	<1
208	11215	16	0.201	2.32	8629	<10	64	257	5	<20	<20	6	0.35	0.44	1.66	<0.01	0.16	130	9	<2	6	<1	<5	<10	<0.01	<1
208	11360	20	0.045	1.93	6614	<10	46	368	5	<20	<20	7	0.24	0.39	0.95	0.02	0.10	59	3	<2	2	<1	<5	<10	<0.01	4
208	11361	<5	<0.010	1.02	599	<10	36	215	4	<20	<20	3	0.34	0.29	1.86	0.01	0.03	45	3	<2	4	<1	<5	<10	<0.01	<1
209	11395	<5	<0.010	2.24	6409	<10	15	161	6	<20	<20	<1	0.05	1.77	4.43	<0.01	0.02	142	3	<2	1	<1	<5	<10	<0.01	<1
210	11208	<5	0.171	>10.00	>20000	<10	12	148	<1	<20	<20	3	0.11	0.46	0.51	0.01	0.05	88	6	<2	<1	<1	<5	12	<0.01	<1
211	11362	5	<0.010	1.00	1216	<10	32	309	3	<20	<20	2	0.12	0.18	0.39	<0.01	0.04	24	<1	<2	<1	<1	<5	<10	<0.01	2
212	11363	5	0.050	2.96	3775	<10	39	196	16	<20	<20	3	0.39	1.85	4.72	0.03	0.07	139	7	<2	8	1	<5	<10	<0.01	5
213	11061	<5	0.205	>10.00	>20000	<10	3	114	<1	<20	<20	1	0.06	0.90	0.63	0.01	0.02	10	5	<2	1	<1	<5	15	<0.01	<1
213	11364	8	0.034	2.61	1811	<10	29	245	10	<20	<20	5	0.64	0.58	0.57	0.02	0.13	29	3	<2	10	<1	<5	<10	<0.01	5
214	11062	<5	0.036	2.30	2805	<10	20	7	12	<20	<20	8	0.44	0.33	0.67	<0.01	0.02	36	5	<2	6	<1	<5	<10	<0.01	<1
214	11063	104	1.070	8.00	5114	<10	160	398	69	<20	<20	12	1.85	0.52	0.91	0.14	0.41	62	15	<2	17	<1	7	<10	0.03	<1
215	11365	9	0.044	3.29	2431	<10	26	126	7	<20	<20	5	0.32	2.06	6.46	0.02	0.15	332	9	<2	3	<1	<5	<10	<0.01	1
215	11366	14	0.056	4.10	5940	<10	31	145	9	<20	<20	4	0.28	2.16	5.30	0.02	0.11	410	6	<2	3	<1	<5	<10	<0.01	2
215	11367	56	0.134	3.77	5911	<10	35	128	13	<20	<20	5	0.73	1.39	6.27	0.02	0.18	512	16	<2	8	<1	<5	<10	<0.01	<1
215	11368	<5	0.014	0.82	546	<10	3	323	<1	<20	<20	<1	0.03	0.16	0.52	<0.01	0.01	30	1	<2	<1	<1	<5	<10	<0.01	<1
177	10676	830	<0.010	>10.00	168	101	<1	102	<1	<20	<20	7	0.06	<0.01	0.06	<0.01	0.03	30	2	<2	<1	<1	<5	<10	<0.01	3
216	11064	<5	0.034	9.95	3497	<10	3	8	5	<20	<20	<1	0.07	4.90	>10.00	0.02	0.03	1166	19	<2	2	<1	12	<10	<0.01	<1
216	11065	777	0.081	>10.00	129	70	<1	272	3	<20	<20	5	0.20	0.04	0.39	0.04	0.06	35	2	<2	<1	<1	<5	<10	0.02	5
216	11213	<5	0.249	>10.00	>20000	<10	15	111	<1	<20	<20	3	0.09	0.73	0.47	0.02	0.06	17	5	<2	1	<1	<5	16	<0.01	<1
217	11155	<5	0.049	3.45	4936	<10	34	106	15	<20	<20	3	0.85	1.10	1.14	0.03	0.17	44	5	<2	14	<1	<5	<10	<0.01	<1
217	11209	95	0.089	2.46	8810	<10	41	113	6	<20	<20	17	0.37	0.85	2.02	0.05	0.18	116	5	<2	3	<1	<5	<10	<0.01	<1
217	11210	<5	0.133	1.88	3362	<10	17	210	7	<20	<20	9	0.24	0.47	1.52	<0.01	0.07	97	9	<2	7	<1	<5	<10	<0.01	<1
217	11211	589	0.751	3.16	1116	<10	1	255	<1	<20	<20	<1	0.02	0.22	0.38	<0.01	<0.01	43	2	<2	<1	<1	<5	<10	<0.01	<1
218	11156	<5	0.033	3.87	19649	<10	51	132	13	<20	<20	8	0.51	1.37	3.63	0.04	0.23	231	8	<2	2	<1	<5	<10	<0.01	<1
219	11157	<5	0.048	3.40	3677	<10	16	160	7	<20	<20	<1	0.30	1.23	3.76	0.02	0.06	229	8	<2	4	<1	<5	<10	<0.01	<1
219	11212	<5	0.080	5.19	7732	<10	57	75	30	<20	<20	4	1.28	1.21	2.33	0.03	0.30	164	3	<2	13	<1	<5	<10	<0.01	<1
220	11066	8	0.059	2.44	2139	<10	23	10	14	<20	<20	10	0.55	0.43	0.42	<0.01	0.03	27	6	<2	7	<1	<5	<10	<0.01	<1
220	11067	35	0.048	3.65	1518	<10	97	298	32	<20	<20	9	2.16	1.16	2.66	0.09	0.53	136	8	3	22	<1	<5	<10	0.02	<1
221	11369	23	0.084	5.43	2459	<10	264	95	15	<20	<20	6	0.53	3.02	8.23	0.03	0.17	552	14	<2	5	<1	<5	<10	<0.01	2

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
221	11371	Fay Ck	otc	sel	qz vein w/ lim	167			<0.2	45	29	39	2	30	15	<0.2	<5	21
222	11370	Fay Ck	otc	sel	qz vein	<5			<0.2	14	31	69	1	15	7	0.2	<5	59
223	11132	Fay Ck		sed		8			<0.2	20	6	40	<1	18	11	<0.2	<5	29
223	11133	Fay Ck		pan	minor mag	28	2	<5	<0.2	113	13	219	6	52	33	<0.2	<5	84
224	10719	Smith Creek Dome	flt	sel	qz veinlet in qz-musc schist	70			<0.2	27	7	34	2	27	17	<0.2	<5	56
225	11401	Smith Creek Dome	otc	sel	qz veinlet w/ lim	8			<0.2	63	<2	35	<1	21	11	<0.2	<5	20
226	11400	Smith Creek Dome	otc	sel	qz veinlet w/ lim	<5			<0.2	6	11	11	<1	12	4	<0.2	<5	<5
227	10701	Smith Creek Dome	otc	sel	qz-mica schist w/ ba (?), lim	11			<0.2	175	18	468	2	10	5	2.4	<5	37
228	11050	Swift Ck	otc	sel	schist w/ black nodules	10			<0.2	165	140	40	<1	13	12	<0.2	<5	14
229	11169	Swift Ck	otc	sel	qz vein w/ lim	18			<0.2	28	131	20	9	24	9	0.3	<5	99
230	10666	Smith Creek Dome	trn	sel	vein qz w/ stb, yellow alt mineral	436			<0.2	36	<2	13	<1	<1	<1	2.6	<5	297
231	10665	Smith Creek Dome	flt	sel	vein qz w/ apy, lim	93			<0.2	12	<2	4	5	14	1	<0.2	<5	226
232	10663	The Fortress	trn	sel	meta qz w/ apy, lim	27			<0.2	10	<2	4	5	18	4	2.4	<5	3035
232	10664	The Fortress	trn	rand	meta qz w/ apy, lim	<5			<0.2	5	<2	<1	1	6	<1	<0.2	<5	44
232	11218	The Fortress	otc	sel	qz veinlet w/ 1% py, lim	31			<0.2	29	8	23	3	23	14	0.4	<5	138
233	11134	The Fortress	otc	rep	1 in-wide qz vein w/ py-hem psuedo	30			<0.2	21	4	37	3	14	6	<0.2	<5	41
233	11135	The Fortress	otc	rep	1 in-wide qz vein w/ hem, py	5			<0.2	18	63	31	1	11	9	<0.2	<5	<5
233	11217	The Fortress	otc	ran	qz veinlets	58			<0.2	22	116	46	3	26	13	<0.2	<5	51
233	11399	The Fortress	otc	sel	qz veinlet w/ sid	14			<0.2	3	3	11	<1	6	6	<0.2	<5	16
234	11216	The Fortress	otc	sel	qz veinlet w/ 20% sid	8			<0.2	35	3	40	2	9	4	<0.2	<5	28
235	11136	The Fortress	otc	rep	qz veinlets w/ py	9			<0.2	29	<2	26	2	13	4	<0.2	<5	44
236	11398	The Fortress	otc	sel	qz veinlet w/ sid after py	52			<0.2	23	15	6	<1	6	1	<0.2	<5	26
237	10650	The Fortress	otc	cont	qz vein in phyllite w/ hem, py	**8301**			<0.2	62	5	40	3	49	31	1.0	<5	1134
238	10651	Peak 2845	otc	rand	phyllite	<5			<0.2	22	13	38	<1	23	11	<0.2	<5	16
239	10765	Buckeye Gulch		slu	py concretions from sluice con	259			1.0	303	21	20	152	37	3	<0.2	9	207
239	11308	Buckeye Gulch		sed		<5			<0.2	52	11	65	<1	44	29	<0.2	<5	27
239	11309	Buckeye Gulch		pan		28	10	8	<0.2	72	7	93	2	64	30	<0.2	<5	25
239	11393	Buckeye Gulch	otc	sel	qz vein	<5			<0.2	35	55	20	3	21	7	<0.2	<5	7
239	11394	Buckeye Gulch	otc	sel	meta qz	<5			<0.2	13	6	15	2	22	6	<0.2	<5	<5
240	10763	Hammond River		slu	placer con	430.43 ppm			27.7	70	473	165	2	44	23	<0.2	7	597
240	11357	Hammond River	flt	sel	phyllite w/ mag properties (?)	<5			<0.2	4	3	2	6	5	<1	<0.2	<5	<5
241	11377	Steep Gulch	otc	sel	porphyry greenstone w/ py	<5			0.2	36	<2	55	1	113	28	<0.2	<5	6
242	11355	Steep Gulch		sed		8			<0.2	43	12	64	<1	34	20	<0.2	<5	30
242	11356	Steep Gulch		pan	tr mag	276	8	8	<0.2	142	9	76	4	50	21	0.2	<5	76
243	11380	Gold Bottom Gulch	otc	sel	qtz schist w/ py	<5			<0.2	48	3	57	1	41	20	<0.2	<5	<5
243	11381	Gold Bottom Gulch	otc	sel	qz veinlet in banded graphitic schist	33			<0.2	91	4	44	2	22	9	<0.2	<5	37

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
221	11371	15	0.041	4.50	3281	<10	231	146	22	<20	<20	6	0.89	1.83	3.80	0.03	0.21	292	6	<2	9	1	<5	<10	<0.01	2
222	11370	21	0.285	2.07	2462	<10	67	227	6	<20	<20	7	0.34	0.41	0.87	0.01	0.12	61	2	<2	6	<1	<5	<10	<0.01	2
223	11132	10	0.139	1.60	1403	<10	43	8	10	<20	<20	8	0.39	0.24	0.17	<0.01	0.03	15	3	<2	5	<1	<5	<10	<0.01	<1
223	11133	23	2.269	6.08	9569	<10	229	490	44	<20	<20	19	1.87	0.23	0.48	0.09	0.43	53	29	<2	15	<1	10	<10	0.01	<1
224	10719	13	0.122	2.83	2905	<10	126	147	7	<20	<20	15	0.45	0.12	0.32	0.02	0.21	38	6	<2	4	<1	<5	<10	<0.01	2
225	11401	24	0.153	2.74	2221	<10	111	69	9	<20	<20	11	0.29	0.04	0.12	0.01	0.14	10	4	<2	2	<1	<5	<10	<0.01	<1
226	11400	25	0.085	0.60	735	<10	22	139	2	<20	<20	<1	0.10	0.04	0.08	<0.01	0.04	7	1	<2	1	<1	<5	<10	<0.01	<1
227	10701	7	0.580	0.63	212	<10	145	182	4	<20	<20	9	0.39	0.01	0.62	<0.01	0.11	106	14	<2	2	<1	<5	<10	<0.01	2
228	11050	<5	<0.010	7.92	>20000	<10	16	75	<1	<20	<20	7	0.40	1.85	2.95	0.01	0.05	151	14	<2	2	<1	<5	14	<0.01	<1
229	11169	66	0.031	1.46	2952	<10	32	253	5	<20	<20	4	0.26	0.25	0.58	0.01	0.08	54	3	<2	2	<1	<5	<10	<0.01	<1
230	10666	28.09%	0.794	0.46	234	<10	13	101	<1	<20	26	<1	0.10	<0.01	0.11	<0.01	0.03	6	<1	<2	8	<1	<5	<10	<0.01	<1
231	10665	23	0.030	0.36	60	<10	<1	268	<1	<20	<20	<1	<0.01	<0.01	<0.01	<0.01	<0.01	<1	<1	<2	<1	<1	<5	<10	<0.01	1
232	10663	44	0.069	0.61	179	<10	6	277	<1	<20	<20	<1	0.04	0.02	0.04	<0.01	0.01	10	<1	<2	<1	<1	<5	<10	<0.01	1
232	10664	17	0.015	0.26	67	<10	3	247	<1	<20	<20	<1	0.02	<0.01	<0.01	<0.01	<0.01	<1	<1	<2	<1	<1	<5	<10	<0.01	<1
232	11218	32	0.092	1.20	1401	<10	27	286	2	<20	<20	2	0.09	0.19	0.56	<0.01	0.03	39	1	<2	2	<1	<5	<10	<0.01	<1
233	11134	9	0.081	1.64	3390	<10	35	170	4	<20	<20	2	0.18	1.00	2.93	0.01	0.07	221	4	<2	3	<1	<5	<10	<0.01	<1
233	11135	<5	0.034	2.27	>20000	<10	45	132	1	<20	<20	6	0.25	1.84	6.34	0.02	0.13	187	7	<2	3	<1	<5	<10	<0.01	<1
233	11217	89	0.069	1.89	2880	<10	57	239	7	<20	<20	6	0.32	0.19	1.02	<0.01	0.13	65	4	<2	5	<1	<5	<10	<0.01	<1
233	11399	<5	0.041	1.60	3525	<10	10	79	2	<20	<20	<1	0.06	1.29	3.34	<0.01	0.02	215	4	<2	1	<1	<5	<10	<0.01	<1
234	11216	7	0.134	1.83	3395	<10	59	217	4	<20	<20	4	0.27	0.83	1.71	0.02	0.16	184	4	<2	4	<1	<5	<10	<0.01	<1
235	11136	<5	0.027	1.84	3090	<10	48	207	6	<20	<20	6	0.26	0.04	0.16	0.01	0.13	21	2	<2	3	<1	<5	<10	<0.01	<1
236	11398	9	0.042	0.91	1378	<10	19	116	2	<20	<20	1	0.10	0.30	0.75	<0.01	0.05	55	1	<2	2	<1	<5	<10	<0.01	<1
237	10650	68	0.705	2.18	1690	<10	52	176	10	<20	<20	5	0.35	0.10	0.16	0.02	0.10	78	1	<2	4	<1	<5	<10	<0.01	3
238	10651	35	0.079	2.03	1697	<10	64	107	13	<20	<20	11	0.85	0.46	0.43	0.01	0.16	27	4	<2	9	<1	<5	<10	<0.01	2
239	10765	10	0.229	>10.00	13	<10	<1	51	<1	<20	<20	<1	0.04	<0.01	0.01	<0.01	0.03	2	<1	<2	<1	<1	<5	<10	<0.01	<1
239	11308	9	0.048	2.95	3647	<10	34	12	15	<20	<20	13	0.67	0.46	0.24	<0.01	0.05	23	5	<2	8	<1	<5	<10	<0.01	<1
239	11309	7	0.049	5.68	5382	<10	154	323	57	<20	<20	17	2.43	1.11	0.29	0.07	0.48	35	10	4	22	<1	7	<10	0.05	<1
239	11393	<5	0.016	1.69	3783	<10	25	252	9	<20	<20	2	0.35	0.15	0.37	0.01	0.08	39	4	<2	3	<1	<5	<10	<0.01	<1
239	11394	<5	0.020	1.17	2651	<10	26	247	6	<20	<20	2	0.32	0.13	0.12	0.01	0.08	14	2	<2	3	<1	<5	<10	<0.01	<1
240	10763	<5	8.277	5.35	1920	<10	86	91	36	<20	47	22	1.19	0.98	2.85	0.02	0.11	106	8	<2	16	<1	<5	<10	0.05	3
240	11357	<5	0.288	0.23	18	<10	100	128	31	<20	<20	5	0.14	0.02	0.03	<0.01	0.07	2	<1	<2	1	<1	<5	<10	<0.01	3
241	11377	<5	<0.010	4.96	755	<10	18	154	59	<20	<20	<1	3.17	3.24	2.56	0.02	0.06	46	6	<2	36	2	<5	<10	0.20	<1
242	11355	<5	0.036	3.16	2996	<10	28	12	17	<20	<20	15	0.72	0.49	0.51	<0.01	0.05	35	6	<2	9	<1	<5	<10	<0.01	<1
242	11356	<5	0.037	5.08	3609	<10	110	429	44	<20	<20	13	1.79	0.74	0.52	0.07	0.39	39	8	2	17	<1	5	<10	0.02	<1
243	11380	<5	0.010	3.33	1946	<10	226	115	20	<20	<20	13	0.85	0.56	0.48	0.04	0.17	34	9	<2	10	<1	<5	<10	0.01	<1
243	11381	52	0.362	2.53	3035	<10	199	134	6	<20	<20	4	0.46	0.68	1.34	0.01	0.18	134	4	<2	4	<1	<5	<10	<0.01	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
243	11382	Gold Bottom Gulch	otc	sel	qz veinlet	61			0.6	506	9	101	3	25	6	<0.2	<5	19
244	11353	Gold Bottom Gulch		sed		<5			<0.2	35	12	58	<1	29	16	<0.2	<5	35
244	11354	Gold Bottom Gulch		pan	2 coarse, 3 fine, 3 v fine Au, abu mag	407.59 ppm	9	14	27.0	53	11	66	3	48	22	0.3	<5	154
245	11352	Hammond River	rub	rand	greenstone, greenschist w/ py, po	<5			<0.2	79	<2	44	<1	88	25	<0.2	<5	23
246	11329	Lofty Gulch		sed		<5			<0.2	28	11	57	<1	26	14	<0.2	<5	38
246	11330	Lofty Gulch		pan	1 v fine Au, abu mag, from cutbank	13.33 ppm	16	14	0.8	62	12	74	4	60	23	0.6	<5	176
246	11351	Lofty Gulch	flt	sel	greenstone w/ fine, euhedral py	<5			<0.2	44	19	58	1	43	21	<0.2	<5	45
247	11376	Hammond River	otc	sel	qz vein	23			<0.2	5	18	1	1	14	6	4.1	<5	2127
248	11058	Swift Ck		pan	1 v fine Au	5869	2	5	<0.2	75	6	159	3	47	22	1.3	<5	520
249	11057	Swift Ck	otc	rep	blk qz-mica schist w/ py	29			0.3	51	19	53	1	26	11	2.6	<5	874
250	11053	Swift Ck		sed		4			<0.2	23	6	44	<1	23	13	<0.2	<5	27
250	11054	Swift Ck		pan	tr mag, from bedrock	25	3	11	<0.2	72	5	139	4	58	26	0.9	<5	344
250	11055	Swift Ck	otc	rand	blk qz-mica schist w/ py (?)	3			0.2	24	4	99	2	77	26	<0.2	<5	31
250	11056	Swift Ck	flt	sel	qtz cobble w/ 1% diss py, cpy (?)	5			<0.2	76	123	24	6	19	12	<0.2	<5	10
250	11170	Swift Ck	otc	sel	qz vein	<5			<0.2	11	301	39	4	19	4	<0.2	<5	18
251	11051	Swift Ck		sed		5			<0.2	33	8	51	1	31	16	<0.2	<5	28
251	11052	Swift Ck		pan	no mag, no visible Au	5	1	<5	<0.2	54	8	92	4	44	23	<0.2	<5	73
252	11359	Midnight Dome	otc	sel	qz vein w/ py, lim	6			<0.2	12	<2	50	2	19	12	<0.2	<5	50
253	10702	Midnight Dome	otc	sel	qtz lense w/ tr py	11			0.6	152	29	76	1	12	6	0.6	<5	25
254	11172	Midnight Dome	otc	sel	qz veinlets w/ py-hem psuedo	37			<0.2	4	6	30	6	18	6	<0.2	<5	26
255	11171	Midnight Dome	otc	sel	3 in-wide qz vein	11			<0.2	3	<2	4	3	15	2	<0.2	<5	9
256	11161	Midnight Dome	otc	ran	meta qz w/ sulfides	<5			<0.2	16	<2	20	4	22	4	<0.2	<5	6
257	11059	Midnight Dome	otc	sel	qz vein w/ euhedral py, lim	62			<0.2	19	4	51	2	26	14	<0.2	<5	70
258	11162	Gold Bottom Gulch	otc	sel	qz vein w/ py-hem psuedo	810			<0.2	55	6	24	8	36	14	<0.2	<5	28
259	11383	Confederate Gulch	otc	rand	qz veinlets	27			0.5	6	37	43	2	57	9	0.3	<5	88
260	11384	Confederate Gulch	otc	sel	qz vein w/ sid, lim	11			0.2	21	3	37	2	25	6	<0.2	<5	49
260	11385	Confederate Gulch	flt	sel	vein qz w/ lim	<5			0.3	25	5	53	1	72	10	<0.2	<5	55
261	11386	Confederate Gulch	otc	sel	qz vein	11			<0.2	11	7	48	2	20	7	<0.2	<5	30
262	11391	Confederate Gulch	otc	rand	qz vein w/ sid	<5			0.9	<1	9	13	<1	3	<1	<0.2	<5	19
263	11389	Confederate Gulch	otc	sel	qz vein	13			<0.2	48	13	29	2	27	10	0.6	<5	101
263	11390	Confederate Gulch	otc	rand	qz vein w/ sid, lim after py	<5			<0.2	37	<2	29	2	28	19	0.2	<5	47
264	11388	Confederate Gulch	otc	sel	meta qz	33			<0.2	8	9	21	2	10	3	<0.2	<5	5
265	11387	Confederate Gulch	otc	sel	qz w/ lim after py	9			<0.2	6	<2	24	2	16	5	2.9	<5	591
266	11143	Union Gulch	otc	grab	blk mica schist w/ 3% py	5			<0.2	31	7	89	1	33	14	<0.2	<5	10
267	11137	Union Gulch	flt	sel	vein qz w/ tr py, lim	13			<0.2	20	5	13	2	15	7	3.1	<5	1023
268	11138	Union Gulch		sed		6			<0.2	23	7	54	<1	23	13	<0.2	<5	36

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
243	11382	338	2.112	1.79	2033	<10	40	357	4	<20	<20	3	0.20	0.44	0.59	<0.01	0.08	58	2	<2	3	<1	<5	<10	<0.01	<1
244	11353	<5	0.054	2.74	2228	<10	26	10	14	<20	<20	12	0.51	0.45	0.80	<0.01	0.04	43	6	<2	7	<1	<5	<10	<0.01	<1
244	11354	<5	5.320	5.10	3452	<10	133	373	42	<20	<20	12	1.38	0.70	0.89	0.08	0.29	50	11	<2	13	<1	5	<10	0.03	<1
245	11352	<5	<0.010	4.09	677	<10	9	147	46	<20	<20	<1	2.79	2.78	2.13	0.03	0.02	27	6	<2	21	<1	<5	<10	0.22	<1
246	11329	<5	0.075	2.30	1970	<10	42	10	15	<20	<20	10	0.59	0.35	0.39	<0.01	0.04	25	5	<2	8	<1	<5	<10	<0.01	<1
246	11330	<5	0.540	9.04	9063	<10	107	454	71	<20	<20	15	1.59	0.31	0.44	0.06	0.30	37	26	<2	11	<1	10	<10	0.03	<1
246	11351	<5	0.019	2.42	2729	<10	48	66	20	<20	<20	11	1.06	0.62	0.31	0.02	0.11	14	4	<2	9	<1	<5	<10	<0.01	<1
247	11376	18	0.034	1.24	714	<10	14	248	4	<20	<20	3	0.24	0.31	0.61	<0.01	0.07	47	1	<2	3	<1	<5	<10	<0.01	<1
248	11058	55	1.070	5.56	2355	<10	130	315	43	<20	<20	15	2.13	0.87	0.49	0.09	0.50	42	7	3	19	<1	6	<10	<0.01	<1
249	11057	11	0.033	3.39	1062	<10	45	84	9	<20	<20	5	0.94	0.97	5.46	0.02	0.30	270	8	<2	12	<1	<5	<10	<0.01	<1
250	11053	<5	0.027	2.16	2040	<10	15	8	9	<20	<20	11	0.36	0.25	0.24	<0.01	0.02	17	4	<2	4	<1	<5	<10	<0.01	<1
250	11054	168	4.285	6.32	1864	<10	226	488	53	<20	<20	23	3.26	0.43	0.27	0.07	1.02	45	8	4	22	<1	7	<10	<0.01	<1
250	11055	<5	0.034	5.56	1694	<10	43	121	24	<20	<20	9	0.72	1.82	3.52	0.03	0.26	131	6	<2	10	<1	<5	<10	<0.01	<1
250	11056	<5	<0.010	1.23	790	<10	123	207	11	<20	<20	4	0.61	0.49	0.26	0.02	0.06	9	5	<2	5	<1	<5	<10	0.03	<1
250	11170	148	0.041	3.73	2590	<10	7	249	2	<20	<20	<1	0.06	0.96	3.33	<0.01	0.04	378	12	<2	<1	<1	<5	<10	<0.01	<1
251	11051	<5	0.045	2.54	2679	<10	22	14	11	<20	<20	10	0.47	0.32	0.35	<0.01	0.03	22	5	<2	5	<1	<5	<10	<0.01	<1
251	11052	143	0.031	4.78	1587	<10	114	287	28	<20	<20	15	1.29	0.37	0.17	0.04	0.30	23	6	<2	11	<1	<5	<10	<0.01	<1
252	11359	19	0.086	3.42	1838	<10	5	154	5	<20	<20	2	0.09	2.17	5.87	<0.01	0.03	506	5	<2	<1	<1	<5	<10	<0.01	1
253	10702	7	0.152	3.06	10816	<10	46	20	6	<20	<20	13	0.45	3.93	>10.00	0.05	0.22	244	20	<2	1	3	<5	<10	<0.01	2
254	11172	6	0.025	2.09	3298	<10	25	177	11	<20	<20	4	0.31	0.68	1.94	0.03	0.11	128	3	<2	2	<1	<5	<10	<0.01	<1
255	11171	21	0.034	0.43	154	<10	6	341	<1	<20	<20	<1	0.03	<0.01	0.01	<0.01	0.01	2	<1	<2	<1	<1	<5	<10	<0.01	<1
256	11161	<5	0.261	0.81	399	<10	29	367	4	<20	<20	1	0.15	0.10	0.21	0.01	0.05	19	<1	<2	1	<1	<5	<10	<0.01	<1
257	11059	8	0.595	2.93	2526	<10	79	215	8	<20	<20	7	0.40	0.55	1.13	0.03	0.22	86	4	<2	2	<1	<5	<10	<0.01	<1
258	11162	22	0.320	2.13	1610	<10	166	268	12	<20	<20	8	0.47	0.23	0.29	0.02	0.22	49	4	<2	3	<1	<5	<10	<0.01	<1
259	11383	7	0.016	4.65	1753	<10	20	123	16	<20	<20	1	1.11	2.74	8.11	0.02	0.17	476	13	<2	19	<1	<5	<10	<0.01	<1
260	11384	6	0.014	3.19	962	<10	30	78	10	<20	<20	1	0.74	1.73	4.51	0.02	0.21	229	10	<2	8	<1	<5	<10	<0.01	<1
260	11385	13	0.021	5.16	1188	<10	24	112	23	<20	<20	<1	1.77	3.49	5.93	0.01	0.18	288	6	<2	32	<1	5	<10	<0.01	<1
261	11386	6	0.023	2.16	817	<10	19	199	9	<20	<20	5	0.72	0.55	0.70	0.02	0.12	51	3	<2	7	<1	<5	<10	<0.01	<1
262	11391	<5	0.014	1.13	281	<10	22	24	2	<20	<20	<1	0.10	0.40	>10.00	<0.01	0.06	1029	8	<2	<1	<1	<5	<10	<0.01	<1
263	11389	28	0.025	1.55	1943	<10	25	175	5	<20	<20	4	0.31	0.26	0.63	0.01	0.13	34	2	<2	2	<1	<5	<10	<0.01	<1
263	11390	6	0.032	2.94	1278	<10	26	143	12	<20	<20	10	0.52	0.28	0.19	0.01	0.13	12	3	<2	4	<1	<5	<10	<0.01	<1
264	11388	<5	<0.010	2.51	2518	<10	4	175	3	<20	<20	1	0.20	0.93	3.23	<0.01	0.03	333	26	<2	3	<1	<5	<10	<0.01	<1
265	11387	<5	0.026	1.65	1649	<10	27	180	3	<20	<20	2	0.22	0.60	1.32	0.01	0.12	95	2	<2	1	<1	<5	<10	<0.01	<1
266	11143	<5	0.019	4.43	463	<10	61	39	13	<20	<20	10	1.66	0.90	1.56	0.02	0.32	74	5	<2	28	<1	<5	<10	<0.01	<1
267	11137	12	<0.010	0.65	1933	<10	3	286	<1	<20	<20	<1	0.02	0.09	0.35	<0.01	<0.01	20	<1	<2	<1	<1	<5	<10	<0.01	<1
268	11138	5	0.107	2.65	1021	<10	12	15	14	<20	<20	16	1.03	0.73	0.30	<0.01	0.04	22	8	<2	12	<1	<5	<10	<0.01	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
268	11139	Union Gulch		pan	1 v fine Au, 1 py cube, abu mag	1471	3	<5	<0.2	98	8	188	4	52	27	<0.2	<5	72
269	11140	Union Gulch		pan	abu mag	17.24 ppm	2	<5	0.7	84	8	159	4	74	40	0.4	<5	209
270	11141	Union Gulch		pan	mod sulfides, abu mag	1559	5	9	<0.2	79	11	346	4	54	40	0.3	<5	128
270	11142	Union Gulch		sed		2			<0.2	24	6	57	<1	24	13	<0.2	<5	43
271	10703	Midnight Dome	trn	sel	massive stb w/ yellow alt mineral	14			<0.2	25	<2	24	<1	<1	2	2.5	<5	<5
271	10704	Midnight Dome	rub	sel	qz veinlet w/ < 1% py, lim	37			<0.2	50	61	53	1	18	7	0.2	<5	46
272	11349	Midnight Dome	otc	sel	qz vein	<5			<0.2	7	<2	37	3	26	13	<0.2	<5	19
273	10709	Midnight Dome	rub	sel	schistose qtz w/ py, lim	<5			<0.2	27	82	15	6	16	5	<0.2	<5	15
274	10706	Midnight Dome	otc	sel	qz-mica schist w/ 5% py	<5			<0.2	67	36	66	2	37	29	<0.2	<5	15
274	10707	Midnight Dome	otc	rand	carb-qz lense w/in schist	<5			0.3	17	13	23	2	10	6	<0.2	<5	8
274	10708	Midnight Dome	flt	sel	vein qz w/ py, mal, lim	179			0.6	1469	35	34	2	9	4	0.2	<5	16
274	11358	Midnight Dome	otc	rand	qz vein w/ py, lim	**532**			<0.2	67	7	33	<1	37	19	<0.2	<5	44
275	11350	Midnight Dome	flt	rand	vein qz	<5			0.3	34	99	4	1	7	1	<0.2	<5	<5
276	10705	Midnight Dome	flt	sel	vein qz w/ unknown metallic, lim	<5			<0.2	62	6	25	5	16	3	<0.2	<5	23
277	11173	Midnight Dome	otc	sel	qz vein w/ py voids	291			<0.2	8	87	21	3	26	16	0.7	<5	317
278	11174	Midnight Dome	flt	grab	vein qz w/ sid, py	18			0.2	30	64	14	3	14	3	<0.2	<5	15
279	11373	Peak 3415	flt	rand	vein qz w/ sid	<5			<0.2	4	<2	19	1	16	4	<0.2	<5	<5
280	11375	Peak 3415	otc	sel	qz vein w/ py, sid, hem, lim	19			<0.2	12	<2	16	<1	10	3	0.3	<5	88
281	11374	Peak 3415	otc	sel	meta qz	<5			<0.2	13	<2	2	3	13	1	<0.2	<5	<5
282	8022	Grotto Mtn	otc	grab	carbonaceous slate	<5			<5			<200	16	<20	<10	<10		21
283	8021	Grotto Mtn	flt	grab	vein qz w/ schist breccia, ank	<5			<5			<200	11	<20	<10	<10		4
284	8032	Vi Ck	otc	sel	qz vein w/ < 1% cpy, gn	<5			<5			<200	22	160	52	<15		140
284	8033	Vi Ck	flt	sel	vein qz w/ < 1% cpy, gn	<5			<5			580	<2	<20	<10	<10		35
285	8031	Sleepy Ck	rub	grab	graphitic schist w/ qz, lim box	<65			<13			<480	18	<90	<10	<74		337
286	10875	BVK		sed		<5			<0.2	32	10	94	1	29	10	0.7	<5	9
286	10876	BVK		pan	mod sulfides, no mag, no visible Au	18	<5	<1	0.3	66	145	84	2	43	25	0.4	<5	37
286	10877	BVK	flt	sel	schist w/ 1% py	<5			<0.2	21	3	56	<1	15	13	<0.2	<5	78
287	11084	Snowden Ck	otc	sel	Skajit ls w/ cal vein	7	1	<5	0.8	354	4	9	3	4	3	<0.2	<5	6
287	11085	Snowden Ck	flt	sel	Skajit ls w/ qz, cal, py, cpy	2	<1	<5	1.5	3	9	6	1	2	<1	<0.2	<5	6
287	11086	Snowden Ck	flt	sel	qz-ch schist w/ 5% euhedral py	8			0.2	19	16	42	2	28	8	0.2	<5	93
288	11150	Snowden Mtn	rub	rep	cal, gyp vein w/ euhedral py	<5	<5	<1	0.2	92	<2	66	1	42	31	<0.2	<5	<5
288	11151	Snowden Mtn	otc	sel	cal, gyp vein w/ euhedral py	<5	<5	<1	0.2	52	<2	59	<1	57	29	<0.2	<5	6
289	11148	Mathews River		sed		7			0.4	29	11	78	2	27	10	0.4	<5	9
289	11149	Mathews River		pan	no mag, no visible Au	8	<5	7	0.7	21	7	60	2	21	6	0.2	<5	7
290	11145	Mathews River, upper	flt	sel	dol w/ py, qz veinlets	6			<0.2	5	6	42	8	12	4	<0.2	<5	8
290	11146	Mathews River, upper		sed		9			0.2	47	13	139	5	46	14	0.5	<5	13

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
268	11139	<5	0.099	>10.00	1332	<10	108	249	124	<20	<20	17	2.40	0.87	0.20	0.12	0.61	36	9	<2	22	<1	6	<10	0.06	<1
269	11140	<5	0.330	>10.00	933	<10	68	220	297	<20	<20	16	1.52	0.47	0.10	0.11	0.43	26	7	<2	15	<1	<5	<10	0.04	<1
270	11141	<5	0.130	>10.00	1219	<10	114	334	123	<20	<20	15	2.49	0.82	0.14	0.14	0.66	32	9	<2	22	<1	6	<10	0.07	<1
270	11142	<5	0.059	2.79	887	<10	13	15	15	<20	<20	16	1.12	0.79	0.25	<0.01	0.04	18	8	<2	13	<1	<5	<10	<0.01	<1
271	10703	33.13%	26.468	0.26	199	14	11	80	<1	<20	29	<1	0.20	<0.01	0.04	<0.01	0.03	3	<1	<2	21	<1	<5	<10	<0.01	<1
271	10704	25	1.020	2.05	980	<10	54	201	6	<20	<20	11	0.41	0.05	0.10	0.01	0.26	14	3	<2	7	<1	<5	<10	<0.01	1
272	11349	8	0.113	1.49	1575	<10	34	206	5	<20	<20	5	0.28	0.05	0.16	0.01	0.12	18	2	<2	2	<1	<5	<10	<0.01	2
273	10709	31	0.044	0.92	1463	<10	81	183	3	<20	<20	4	0.21	0.17	0.69	0.02	0.09	34	2	<2	1	<1	<5	<10	<0.01	<1
274	10706	<5	0.048	3.75	7765	<10	31	137	18	<20	<20	14	1.23	0.96	0.82	0.04	0.26	79	6	<2	18	<1	<5	<10	0.03	4
274	10707	<5	0.019	1.87	10141	<10	9	83	4	<20	<20	7	0.14	1.76	4.54	0.02	0.08	357	5	<2	2	1	<5	<10	<0.01	1
274	10708	230	5.090	0.68	388	<10	2	270	<1	<20	<20	<1	0.03	0.09	0.24	<0.01	0.01	8	<1	<2	<1	<1	<5	<10	<0.01	<1
274	11358	29	0.232	2.70	2556	<10	49	140	10	<20	<20	7	0.38	0.55	0.91	0.02	0.14	77	3	<2	3	<1	<5	<10	<0.01	1
275	11350	<5	0.047	0.45	160	<10	2	208	1	<20	<20	<1	0.07	0.04	0.12	<0.01	<0.01	9	<1	<2	<1	<1	<5	<10	<0.01	1
276	10705	7	0.046	0.56	874	<10	6	246	2	<20	<20	1	0.13	0.05	0.10	<0.01	0.03	5	2	<2	1	<1	<5	<10	<0.01	1
277	11173	30	0.010	0.90	492	<10	15	271	7	<20	<20	4	0.32	0.21	0.08	0.01	0.08	11	1	<2	3	<1	<5	<10	<0.01	<1
278	11174	45	0.029	1.69	1215	<10	6	265	2	<20	<20	<1	0.14	0.57	1.83	<0.01	0.03	59	3	<2	2	<1	<5	<10	<0.01	<1
279	11373	158	<0.010	1.55	760	<10	15	228	8	<20	<20	4	0.71	0.52	3.87	<0.01	0.08	233	7	<2	8	<1	<5	<10	<0.01	1
280	11375	1101	0.010	1.51	348	<10	10	117	2	<20	<20	4	0.15	0.19	>10.00	<0.01	0.08	1340	8	<2	<1	<1	<5	<10	<0.01	3
281	11374	28	<0.010	0.39	234	<10	8	276	2	<20	<20	<1	0.06	0.04	0.14	<0.01	0.01	8	<1	<2	<1	<1	<5	<10	<0.01	1
282	8022	30.7		0.5		<20	460	170		<200	<2	6				0.06							5.7	<1		<500
283	8021	13.0		1.4		<20	<100	280		<200	<2	<5				0.55							4.0	<1		<500
284	8032	356.0		1.4		<20	<100	310		<200	<2	<5				0.07							0.9	<1		<500
284	8033	151.0		1.0		<20	<100	320		<200	<2	<5				0.18							1.9	<1		<500
285	8031	2960.0		1.1		<290	4700	<260		<2600	15	9				<0.45							5.5	<2		<1800
286	10875	<5	0.051	2.94	461	<10	27	13	15	<20	<20	13	0.93	1.02	7.05	<0.01	0.02	174	7	<2	36	<1	<5	<10	<0.01	4
286	10876	<5	0.082	7.05	547	<10	13	77	25	<20	<20	7	1.33	1.14	5.91	0.02	0.15	141	6	<2	36	2	<5	<10	0.01	7
286	10877	5	0.023	5.01	5658	<10	37	66	44	<20	<20	9	1.27	1.53	4.01	0.03	0.16	138	7	3	25	4	8	<10	<0.01	2
287	11084	<5	0.013	6.57	1136	<10	18	62	30	<20	<20	17	1.16	0.06	6.51	0.02	<0.01	298	5	<2	<1	1	<5	<10	0.1	2
287	11085	<5	<0.010	1.01	425	<10	52	6	1	<20	<20	<1	0.04	0.24	>10.00	<0.01	0.02	435	8	<2	<1	<1	<5	<10	<0.01	<1
287	11086	<5	0.017	4.23	80	<10	23	211	23	<20	<20	3	0.69	0.21	0.42	0.04	0.09	30	3	<2	9	<1	<5	<10	<0.01	12
288	11150	<5	<0.010	8.05	1027	<10	2	227	212	<20	<20	<1	4.61	3.63	3.30	0.02	<0.01	69	5	8	162	<1	30	<10	0.01	<1
288	11151	<5	0.017	7.09	988	<10	<1	204	161	<20	<20	<1	4.29	3.89	4.43	0.02	<0.01	80	7	7	140	<1	26	<10	0.02	<1
289	11148	<5	0.058	2.61	495	<10	20	12	13	<20	<20	5	0.83	0.96	8.27	<0.01	0.02	119	6	<2	20	<1	<5	<10	<0.01	2
289	11149	<5	0.034	2.31	398	<10	121	124	24	<20	<20	7	1.46	1.28	>10.00	0.05	0.33	229	7	<2	20	<1	<5	<10	<0.01	4
290	11145	<5	0.020	7.45	8789	<10	24	51	9	<20	<20	<1	0.09	2.72	>10.00	<0.01	0.04	219	15	<2	3	<1	<5	<10	<0.01	<1
290	11146	<5	0.058	3.31	503	<10	23	12	18	<20	<20	11	0.95	0.66	3.31	<0.01	0.03	62	7	<2	22	<1	<5	<10	<0.01	4

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
290	11147	Mathews River, upper		pan	no mag, no visible Au	9	9	7	<0.2	48	17	127	5	60	15	0.4	<5	10
291	10698	Luna	flt	sel	calc-qz-ser schist w/ 15% cpy, py	553			44.6	4.50%	16	375	2	896	745	3.5	<5	848
291	10699	Luna	flt	sel	qz-ser schist w/ 60% sl, 5% cpy, py	385			18.6	8338	34	8320	<1	622	1767	1283.9	<5	2133
291	10700	Luna	flt	sel	qz-ser schist w/ 45% cpy & py, sl	1129			98.4	10.20%	71	8447	6	1325	1103	66.4	12	2931
291	10761	Luna	flt	sel	ep skarn w/ < 1% cpy, mag, gar	13			3.2	2149	12	59	1	32	52	0.6	<5	219
292	8044	Demos	otc	sel	skarn w/ 25% cpy, py, lim, MnO	390			32	2.44%		840	<2	73	120	<10		138
292	8045	Demos	flt	grab	skarn w/ gar, ep	<5			<5			<200	<2	28	<10	<10		49
292	8046	Demos	otc	sel	skarn w/ 25% cpy, 25% mag	290			12	1.09%		450	<2	180	380	<10		121
293	11204	Demos	flt	sel	ser-qz schist w/ py, cpy	9			<0.2	90	41	62	1	33	13	0.3	<5	64
293	11205	Demos	flt	sel	skarn w/ abu mag, 1% cpy	<5			0.8	622	<2	17	1	3	4	<0.2	<5	80
293	11243	Demos	otc	sel	Skajit ls (?) w/ 2% cpy, mal, az	56			4.0	3871	16	22	2	5	4	<0.2	<5	76
294	11251	Ginger	otc	sel	calc silicate w/ py, cpy, qz, ep, mal	1201			17.5	2.80%	18	118	9	93	144	1.8	<5	115
295	11047	Ginger	otc	sel	felsic ser schist w/ 2% py, cpy (?)	16			1.2	1043	35	55	4	26	33	1.2	<5	266
295	11048	Ginger	otc	ran	diabase sill w/ <1% diss po	3			<0.2	57	<2	38	1	148	35	<0.2	<5	<5
296	8041	Ginger	otc	sel	skarn w/ < 10% cpy, py, mal	548			42	3.61%		<200	<2	210	78	<10		166
296	8042	Ginger	otc	grab	skarn w/ < 1% cpy, gar, ep	<5			<5	0.04%		<200	<2	<20	11	<10		34
296	8043	Ginger	rub	sel	skarn w/ 30% cpy, ep, qz	78			<5	1.00%		<200	4	79	25	<10		41
297	11219	Ginger	otc	ran	skarn w/ 20% py, 5% cpy	99			12.7	2.90%	<2	75	13	65	53	0.9	<5	229
297	11220	Ginger	otc	spac	ep grossularite skarn w/ cpy, py, po	41			3.3	3709	2	22	10	13	11	<0.2	<5	33
298	11107	Evelyn Lee	trn	rep	skarn w/ 3% cpy, mal, gar	82			18.5	7.00%	12	148	4	15	5	0.5	76	15
298	11108	Evelyn Lee	rub	sel	skarn w/ cpy, ep, gar, qz	32			3.1	4637	5	33	109	11	6	<0.2	<5	<5
299	8036	Evelyn Lee	otc	grab	skarn w/ <5% cpy, gar, ep, mal, az	<5			<5	1.46%		210	36	25	37	<10		17
299	8037	Evelyn Lee	otc	grab	gar-rich skarn w/ mal	<5			<5			<200	<2	<20	<10	<10		9
299	8038	Evelyn Lee	rub	sel	skarn w/ < 10% cpy	82			28	6.42%		<200	<2	100	32	<10		16
299	8039	Evelyn Lee	otc	grab	brn gar skarn w/ no sulfides	17			<5			<200	97	48	28	<10		33
299	8040	Evelyn Lee	flt	sel	skarn w/ 50% cpy, gar, ca	200			13	5.01%		<200	7	41	<10	<10		25
299	11046	Evelyn Lee	otc	sel	skarn w/ 1% cpy, <5% py, mal, az	1896			8.6	3.50%	<2	165	4	27	34	0.5	63	21
299	11104	Evelyn Lee	otc	sel	qz vein w/ 1% cpy, 1% po	5			0.9	1407	<2	32	7	8	2	<0.2	<5	<5
299	11105	Evelyn Lee	otc	sel	skarn w/ 10% cpy, mal, az	270			35.7	4.60%	<2	77	11	11	5	0.3	110	38
299	11106	Evelyn Lee	otc	sel	ser calc rock w/ qz, cpy, mal, az	41			4	1.90%	<2	38	3	12	5	<0.2	<5	<5
300	11183	Victor	otc	sel	Skajit ls w/ py, qz veins	4			1.2	5	3	17	<1	4	2	<0.2	<5	<5
300	11184	Victor	flt	sel	ep-gar-qz skarn w/ 3% mag	3			1.6	2	<2	7	<1	<1	<1	<0.2	<5	<5
301	11187	Peak 4737	otc	cont	ep-qz skarn w/ 5% cpy, mal, az	49			2.5	2999	<2	47	4	12	45	0.4	<5	15
302	11185	Peak 4737	otc	cont	ep-gar-qz skarn w/ 5% cpy, mal, az	101			10.8	5695	<2	72	12	23	16	0.7	<5	18
302	11186	Peak 4737	otc	cont	ep-gar-qz skarn w/ cpy, py, mal, az	321			12.5	1.22%	3	102	13	51	30	0.9	7	50
302	11188	Peak 4737	otc	rep	ep-gar-qz skarn w/ cpy, py, mal, az	<5			0.7	455	6	56	4	13	5	<0.2	<5	37

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
290	11147	<5	0.042	4.72	587	<10	569	426	56	<20	<20	21	2.60	1.12	3.09	0.09	0.45	105	8	4	39	<1	<5	<10	0.03	10
291	10698	6	<0.010	>10.00	668	<10	18	34	24	<20	<20	38	0.96	0.44	9.14	<0.01	0.47	137	2	<2	6	1	<5	<10	0.03	2
291	10699	<5	<0.010	>10.00	1262	23	<1	38	4	<20	87	18	0.21	0.12	0.34	<0.01	0.21	20	2	<2	1	<1	<5	<10	<0.01	1
291	10700	60	0.012	>10.00	524	<10	<1	60	8	<20	<20	12	0.57	0.22	1.48	<0.01	0.43	107	5	<2	4	4	<5	12	0.02	9
291	10761	<5	0.079	>10.00	944	<10	153	38	21	<20	64	4	0.70	0.12	>10.00	<0.01	0.02	265	1	<2	<1	<1	<5	<10	<0.01	2
292	8044	14.0		7.4		<20	<100	<50		<200	<2	<5				0.15							0.9	<1		<500
292	8045	18.0		10.0		<20	<100	110		<200	17	<5				0.13							6.5	<1		<500
292	8046	23.7		>10.0		<20	<100	<50		<200	<2	<5				0.14							1.5	<1		<500
293	11204	<5	0.034	1.67	158	<10	53	76	9	<20	<20	6	0.65	0.36	0.22	0.02	0.23	14	2	<2	5	<1	<5	<10	<0.01	3
293	11205	<5	0.010	>10.00	996	<10	5	12	39	<20	<20	1	0.81	0.09	>10.00	<0.01	<0.01	58	4	<2	<1	<1	<5	<10	0.02	<1
293	11243	<5	0.047	8.60	1145	<10	18	26	67	<20	<20	1	1.45	0.11	>10.00	<0.01	0.09	177	9	2	2	<1	<5	<10	0.04	7
294	11251	<5	0.861	>10.00	950	<10	5	34	25	<20	57	2	0.85	0.17	6.34	<0.01	0.01	113	6	<2	1	<1	<5	<10	0.11	<1
295	11047	43	0.463	0.71	319	<10	42	65	6	<20	<20	9	0.36	0.71	2.70	0.06	0.25	292	8	<2	<1	<1	<5	<10	<0.01	9
295	11048	<5	<0.010	5.16	654	<10	10	155	87	<20	<20	2	4.28	4.64	2.69	0.12	0.01	38	12	4	34	<1	<5	<10	0.17	<1
296	8041	33.2		>10.0		<20	170	92		<200	<2	<5				0.14							7.8	<1		<500
296	8042	28.0		7.3		<20	<100	160		<200	3	13				0.14							12.0	<1		<500
296	8043	16.0		8.7		<20	320	89		<200	25	71				0.41							14.0	<1		610
297	11219	<5	0.583	6.52	660	<10	27	37	25	<20	<20	60	1.43	0.18	7.05	<0.01	0.06	200	9	2	4	<1	<5	<10	0.14	20
297	11220	<5	0.141	3.85	467	<10	30	57	26	<20	42	6	0.98	0.20	3.28	0.02	0.36	110	6	2	6	<1	<5	<10	0.15	14
298	11107	<5	0.712	>10.00	1128	14	4	87	16	<20	<20	4	1.18	0.24	8.47	<0.01	<0.01	35	6	<2	<1	<1	<5	14	0.06	12
298	11108	<5	0.083	2.04	1016	<10	39	80	14	<20	<20	<1	0.94	0.47	>10.00	<0.01	0.01	261	3	<2	2	<1	<5	<10	0.11	<1
299	8036	33.9		>10.0		<20	<100	66		<200	<2	7				0.36							7.2	<1		<500
299	8037	29.5		>10.0		<20	<100	91		<200	2	18				<0.05							1.9	<1		<500
299	8038	81.7		>10.0		<20	<100	110		<200	<2	16				0.35							4.9	<1		<500
299	8039	27.5		4.7		<20	<100	160		<200	3	18				1.00							13.0	1		<500
299	8040	22.2		>10.0		<20	<100	97		<200	<2	13				0.13							8.2	<1		<500
299	11046	<5	0.170	7.05	1479	<10	5	61	16	<20	<20	2	1.08	0.06	7.65	0.01	0.02	43	6	<2	<1	<1	<5	<10	0.08	12
299	11104	<5	0.074	1.02	537	<10	16	246	2	<20	<20	<1	0.12	0.03	4.98	<0.01	0.08	126	2	<2	<1	<1	<5	<10	<0.01	<1
299	11105	453	0.370	>10.00	1370	<10	<1	75	2	<20	93	42	0.41	0.04	>10.00	<0.01	<0.01	7	3	<2	<1	<1	<5	<10	<0.01	<1
299	11106	<5	0.103	4.58	1012	<10	4	70	38	<20	<20	1	0.60	0.03	9.30	<0.01	<0.01	81	4	<2	<1	<1	<5	<10	0.06	4
300	11183	<5	<0.010	0.98	272	<10	10	22	5	<20	<20	2	0.30	0.45	>10.00	0.01	0.06	>2000	7	<2	9	<1	<5	<10	<0.01	2
300	11184	<5	<0.010	0.11	56	<10	12	2	2	<20	<20	<1	0.03	0.15	>10.00	<0.01	0.01	119	2	<2	<1	<1	<5	<10	<0.01	<1
301	11187	19	0.058	2.06	846	<10	9	43	11	<20	<20	<1	0.91	0.06	7.59	0.06	0.02	84	4	<2	<1	<1	<5	<10	0.11	5
302	11185	<5	0.117	4.50	1069	<10	7	74	18	<20	<20	<1	1.33	0.14	9.08	<0.01	0.03	59	5	<2	1	<1	<5	<10	0.08	11
302	11186	<5	0.204	3.36	693	<10	3	75	9	<20	<20	<1	0.87	0.07	8.21	0.03	0.01	158	4	<2	<1	<1	<5	<10	0.04	6
302	11188	<5	0.037	2.02	1213	<10	11	43	20	<20	<20	2	1.65	0.20	>10.00	0.38	0.03	263	8	3	4	<1	<5	<10	0.12	2

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
303	11189	Aero-Mag Anomaly	flt	sel	calc hfls w/ 3% po, abu lim	<5			0.4	58	<2	23	3	12	3	<0.2	<5	34
303	11190	Aero-Mag Anomaly	flt	sel	calc silicate rock w/ 3% cpy	8			0.8	1.20%	<2	37	3	9	4	<0.2	<5	<5
304	11191	Peak 5274	otc	rep	ser granite w/ abu lim	10			<0.2	86	<2	33	1	18	12	<0.2	<5	23
305	8028	Peak 5274	rub	grab	skarn w/ cpy, py, mal, az	979			22	4.68%		<340	52	80	44	<34		248
305	8029	Peak 5274	otc	grab	skarn w/ cpy, gar, ep	<5			<5	0.14%		<200	7	23	13	<10		50
305	8030	Peak 5274	rub	sel	massive sulfide (cpy)	1020			15	7.76%		300	21	98	97	<20		122
306	11182	Venus	otc	sel	calc hfls w/ diss cpy, py, ep (?)	6			<0.2	86	<2	32	1	35	15	<0.2	<5	13
307	11129	Venus	otc	grab	skarn near aero-mag anomaly	2			<0.2	38	3	58	1	29	12	<0.2	<5	<5
308	8047	Venus	core	grab	monz, hfls, skarn	7			<5	0.09%		<200	160	35	20	<10		8
308	8048	Venus	flt	grab	skarn w/ 40% py, gar	55			<5			<200	4	60	61	<10		23
308	8050	Venus	rub	sel	granite ? w/ cpy, moly	8			<5	0.05%		<200	236	<20	<10	<10		4
308	11109	Venus	otc	rep.	silicious rock w/ 3% cpy	10			0.7	2073	2	16	9	14	16	<0.2	<5	<5
308	11130	Venus	flt	sel	massive sulfide w/ lim, MnO	441			2.4	0.47%	<2	171	3	2	14	<0.2	<5	27
308	11131	Venus	flt	sel	massive cpy	43			1.8	2030	5	37	11	59	82	<0.2	<5	65
308	11180	Venus	otc	grab	ser granite w/ cpy, py, mal, lim	14			1	1382	<2	22	3	21	16	<0.2	<5	6
308	11181	Venus	otc	ran	skarn w/ >20% cpy, py, mag, po (?)	39			2.2	0.17%	<2	36	4	9	57	<0.2	<5	16
309	11128	Venus	otc	grab	rhyolite (?) w/ cpy, po	3			<0.2	150	<2	33	2	23	8	<0.2	<5	<5
310	11110	Venus	otc	sel	0.25 ft-wide qz vein w/ 2% cpy, lim	5			0.7	1609	<2	56	3	68	3	<0.2	<5	<5
310	11125	Venus	otc	rep	meta granite w/ 3% cpy	4			0.2	272	<2	12	2	20	12	<0.2	<5	9
310	11126	Venus	otc	grab	sericitized prophyry w/ 3% cpy	3			<0.2	179	<2	10	2	20	7	<0.2	<5	<5
310	11127	Venus	otc	grab	black fine-grained rock w/ cpy, py	5			0.3	607	<2	34	1	10	18	<0.2	<5	<5
311	11221	Sheep Ck		sed		<5			0.2	29	8	56	<1	28	10	<0.2	<5	14
311	11222	Sheep Ck		pan	minor mag, from bedrock	14	<5	5	0.4	81	22	85	3	40	14	0.3	<5	46
311	11223	Sheep Ck	otc	grab	ch-qz schist w/ py, po	<5			0.8	44	9	77	3	29	6	0.6	<5	5
311	11224	Sheep Ck		pan	1 v fine Au, mod mag and py	678	10	7	0.5	78	21	81	3	52	21	0.6	<5	130
311	11225	Robert Ck		sed		<5			<0.2	48	12	76	1	29	11	<0.2	<5	16
311	11226	Robert Ck		pan	mod mag, gar (?), lim cube (?)	259	8	3	<0.2	91	16	78	5	35	13	0.5	<5	35
312	11227	Robert Ck	otc	sel	meta qz w/ 1% po, cpy (?), lim	<5			0.3	59	39	40	<1	29	13	0.3	<5	<5
313	11194	Big Jim Ck (Sulak)		sed		<5			<0.2	26	11	66	2	25	8	0.4	<5	27
313	11195	Big Jim Ck (Sulak)		pan	no mag, no visible Au	10	7	7	<0.2	25	16	42	4	24	6	0.4	<5	20
314	11235	Phoebe Ck		sed		53			<0.2	29	12	67	1	26	11	0.3	<5	20
314	11236	Phoebe Ck		pan	minor mag	316	9	6	<0.2	43	13	74	5	33	9	0.8	<5	35
315	11232	Phoebe Ck		sed		<5			0.3	25	9	52	1	21	8	<0.2	<5	12
315	11233	Phoebe Ck		pan	minor mag	12	10	7	0.3	34	11	45	2	23	8	0.3	<5	24
315	11234	Phoebe Ck	flt	sel	blk mica schist w/ po, py	<5			0.9	11	6	30	2	16	4	0.2	<5	<5
316	11228	Robert Ck		pan	mod mag, minor py	1219	5	6	1.7	34	15	73	2	37	13	<0.2	<5	40

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
303	11189	<5	<0.010	3.60	1439	<10	4	88	33	<20	<20	<1	2.43	0.34	9.66	0.01	<0.01	105	10	5	1	<1	5	<10	0.12	17
303	11190	<5	0.072	1.60	55	<10	8	215	2	<20	<20	3	0.10	<0.01	0.50	0.02	0.05	18	4	<2	<1	<1	<5	<10	<0.01	3
304	11191	<5	0.010	1.99	338	<10	44	116	25	<20	<20	6	1.36	0.89	0.77	0.03	0.21	116	3	<2	9	<1	<5	<10	0.19	<1
305	8028	1440.0		>10.0		<130	< 270	<120		< 1200	150	<5				<0.20							4.8	<1		<970
305	8029	258.0		>10.0		<20	140	<50		<200	80	<5				0.10							6.3	<1		<500
305	8030	555.0		>10.0		<58	<100	89		<530	19	6				0.47							21.0	<1		<500
306	11182	<5	<0.010	1.68	337	<10	42	48	30	<20	<20	7	1.19	0.46	2.74	0.03	0.49	254	10	2	13	<1	<5	<10	0.27	3
307	11129	<5	<0.010	2.74	648	<10	24	80	28	<20	<20	10	1.74	1.30	1.61	0.05	0.17	49	7	2	22	<1	<5	<10	0.07	<1
308	8047	11.0		4.2		<20	520	130		<200	7	26				2.10							14.0	<1		<500
308	8048	14.0		>10.0		<20	<100	90		<200	<2	14				0.39							11.0	<1		<500
308	8050	14.0		2.8		<20	660	180		<200	13	25				2.20							9.4	1		<500
308	11109	<5	<0.010	1.92	75	<10	73	68	21	<20	<20	6	0.76	0.29	0.58	0.05	0.31	54	6	<2	3	<1	<5	<10	0.12	3
308	11130	609	0.024	>10.00	525	<10	<1	10	11	<20	<20	<1	0.02	8.94	<0.01	<0.01	<0.01	3	<1	<2	<1	1	<5	<10	<0.01	<1
308	11131	<5	0.030	>10.00	224	<10	<1	61	14	<20	<20	2	0.30	0.24	0.61	0.03	0.06	37	2	<2	2	<1	<5	<10	0.06	<1
308	11180	<5	0.015	3.09	129	<10	49	68	11	<20	<20	4	0.73	0.44	1.49	0.04	0.35	41	5	<2	5	<1	<5	<10	0.09	5
308	11181	239	0.020	32.14%	814	<10	<1	100	21	<20	<20	2	0.56	0.03	5.76	<0.01	<0.01	11	4	<2	<1	<1	<5	<10	0.04	5
309	11128	<5	<0.010	1.68	273	<10	61	53	26	<20	<20	7	1.31	0.73	0.84	0.08	0.24	72	4	<2	4	<1	<5	<10	0.14	4
310	11110	<5	0.026	4.25	418	<10	4	197	17	<20	<20	<1	2.62	3.02	0.44	<0.01	0.01	14	<1	<2	14	<1	<5	<10	0.01	<1
310	11125	<5	<0.010	1.64	81	<10	70	63	17	<20	<20	8	0.92	0.40	0.70	0.06	0.27	68	4	<2	3	<1	<5	<10	0.11	5
310	11126	<5	<0.010	0.97	85	<10	80	29	16	<20	<20	12	0.75	0.20	0.66	0.07	0.33	82	5	<2	3	<1	<5	<10	0.11	2
310	11127	<5	<0.010	3.09	321	<10	5	12	6	<20	<20	2	0.76	1.18	1.21	0.03	0.05	28	6	<2	3	<1	<5	<10	0.06	<1
311	11221	<5	0.011	2.85	647	<10	10	13	12	<20	<20	11	1.02	1.09	6.66	<0.01	0.05	344	8	<2	18	<1	<5	<10	<0.01	<1
311	11222	<5	0.027	4.42	762	<10	127	190	30	<20	<20	15	1.71	1.59	>10.00	0.05	0.37	605	13	2	23	<1	<5	<10	0.05	4
311	11223	<5	<0.010	2.11	407	<10	184	44	38	<20	<20	6	1.58	1.96	>10.00	<0.01	0.21	512	7	<2	26	<1	<5	<10	0.06	2
311	11224	<5	0.030	4.01	653	<10	177	185	36	<20	<20	17	1.66	1.68	>10.00	0.04	0.40	570	12	<2	24	<1	<5	<10	0.05	4
311	11225	<5	0.013	3.04	628	<10	12	15	16	<20	<20	13	1.12	1.10	4.49	<0.01	0.04	216	8	2	20	<1	<5	<10	0.02	<1
311	11226	<5	0.032	6.62	2234	<10	68	299	40	<20	<20	52	2.03	0.98	7.47	0.07	0.24	290	42	<2	15	<1	16	<10	0.15	<1
312	11227	<5	<0.010	2.51	502	<10	5	138	8	<20	<20	<1	0.62	0.42	1.44	<0.01	0.03	56	4	<2	10	<1	<5	<10	<0.01	<1
313	11194	<5	0.012	1.94	384	<10	42	15	25	<20	<20	22	0.95	0.64	0.50	<0.01	0.22	18	21	2	20	<1	<5	<10	0.06	<1
313	11195	<5	0.018	2.34	588	<10	80	487	39	<20	<20	23	1.92	0.40	2.07	0.11	0.31	105	23	4	8	<1	5	<10	0.11	2
314	11235	<5	0.016	2.46	465	<10	26	13	19	<20	<20	13	0.96	0.69	0.99	<0.01	0.10	39	10	<2	17	<1	<5	<10	0.04	<1
314	11236	<5	0.016	6.86	5007	<10	69	531	51	<20	<20	25	3.12	0.61	2.67	0.12	0.22	63	78	2	14	<1	39	<10	0.15	<1
315	11232	<5	0.014	1.95	515	<10	18	9	12	<20	<20	9	0.67	0.83	6.13	<0.01	0.06	180	8	<2	11	<1	<5	<10	0.02	<1
315	11233	<5	0.021	2.63	886	<10	74	199	25	<20	<20	15	1.06	1.06	>10.00	0.06	0.22	329	15	<2	10	<1	<5	<10	0.10	1
315	11234	<5	0.012	1.45	310	<10	57	18	3	<20	<20	4	0.19	1.19	>10.00	0.01	0.11	962	9	<2	4	<1	<5	<10	<0.01	3
316	11228	<5	0.052	3.87	1010	<10	78	245	29	<20	<20	21	1.77	1.39	6.50	0.07	0.37	302	16	2	21	<1	<5	<10	0.09	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
316	11229	Robert Ck		sed		<5			<0.2	60	11	80	1	34	15	<0.2	<5	16
316	11230	Robert Ck	otc	ran	ch-qz schist w/ tr py, lim	<5			<0.2	39	22	75	<1	29	12	<0.2	<5	<5
317	11077	Mule Ck		pan	tr rusty sulfides	235	3	<5	0.7	120	19	249	4	33	15	0.6	<5	87
317	11078	Bettles River		pan		718	<1	9	0.3	70	14	155	3	21	9	0.3	<5	26
318	11097	Limestone Ck		pan	minor mag, no visible Au	18	5	<5	0.6	76	8	247	3	23	7	0.3	<5	20
318	11098	Bettles River		pan	1 v fine Au, tr mag	2247	4	14	0.7	95	32	122	5	27	13	0.4	<5	46
318	11099	Eightmile Ck		sed		3			0.4	32	10	78	3	37	12	0.5	<5	25
318	11100	Eightmile Ck		pan	tr mag, from bedrock	19	3	18	0.4	46	6	133	4	28	9	0.5	<5	23
318	11101	Eightmile Ck		pan	tr mag, no visible Au	1434	5	12	1	84	22	147	4	74	20	0.8	<5	80
319	11102	Garnet Ck		sed		3			<0.2	44	11	96	2	42	19	0.2	<5	20
319	11103	Garnet Ck		pan	tr mag, no visible Au	57	4	6	0.2	53	15	111	4	23	9	0.2	<5	26
320	11095	Limestone Ck	flt	sel	massive cpy w/ mal and az	77			3.3	1.41%	<2	43	2	19	82	<0.2	<5	8
320	11096	Limestone Ck		pan		15	5	19	1	108	9	270	10	59	22	1.2	<5	94
321	11073	Mule Ck	flt	sel	qtz cobble w/ 3% po, 1% cpy, 1% py	47			0.6	217	7	14	<1	13	11	<0.2	<5	<5
321	11074	Mule Ck		sed		3			0.3	44	11	87	3	35	11	0.4	<5	39
321	11075	Mule Ck		pan	tr mag, 1 fine Au	>10000	2	<5	6.4	43	10	160	4	26	9	0.2	<5	30
321	11076	Mule Ck		pan	1 v fine Au (?)	32	3	6	0.6	60	9	101	4	31	11	0.3	<5	54
322	11092	Limestone Ck	otc	sel	Skajit ls w/ 1% diss sulfides	4			1.3	12	5	15	5	9	1	0.4	<5	142
322	11093	Limestone Ck		sed		2			0.7	24	6	42	1	17	7	<0.2	<5	15
322	11094	Limestone Ck		pan	tr fine sulfides (?)	14	3	8	1.3	21	2	51	1	5	2	<0.2	<5	15
323	8049	Wiehl Mtn	rub	sel	qz vein in schist w/ < 1% gn	<5			<5			<200	16	<20	<10	<10		6
324	11152	Brockman Ck	otc	ran	Skajit ls w/ 3% py	7			1.0	23	60	84	3	47	6	0.3	<5	119
324	11153	Brockman Ck		sed		8			<0.2	27	6	79	<1	27	15	<0.2	<5	8
324	11154	Brockman Ck		pan	1 v fine Au (?), no mag	12	8	7	<0.2	53	9	84	5	45	17	<0.2	<5	12
324	11192	Brockman Ck	otc	rep	graphitic calc schist w/ 2% py	<5			0.5	16	8	36	2	14	4	<0.2	<5	<5
325	11193	Brockman Ck		pan	mod euhedral py	55	8	6	0.4	48	10	82	3	39	16	<0.2	<5	20
326	11082	Brockman Ck		pan	minor sulfides, from cutbank	16	3	<5	0.7	51	4	141	3	23	10	<0.2	<5	22
327	11083	Brockman Ck		pan	tr sulfides	12	2	5	<0.2	37	4	105	3	31	18	<0.2	<5	13
328	8034	Wiehl Mtn	otc	grab	hfls w/ lim, < 1% po, tr cpy	<5			<5			<200	<2	42	11	<10		85
329	8027	Sukakpak Mtn	otc	sel	stb vein													
329	11049	Sukakpak Mtn	otc	chip	3.2 ft wide stb and qz vein	16.14 ppm			6.2	63	209	26	1	<1	<1	3.0	<5	10
329	11111	Sukakpak Mtn	otc	chip	2.4 ft-wide qz vein w/ massive Sb	14.71 ppm			2.3	38	6	44	3	<1	<1	2.2	<5	56
329	11112	Sukakpak Mtn	flt	sel	massive stb	47.26 ppm			31.9	60	4	7	1	<1	<1	5.2	<5	16
329	11113	Sukakpak Mtn	flt	rand	vein qz w/ 30% Sb, Sb alteration	43.24 ppm			3.1	35	37	49	3	<1	<1	2.5	<5	63
330	8023	Sukakpak Mtn	otc	grab	gossan zone w/ hem	<57			<14			<600	160	<150	<10	<67		3880
330	8024	Sukakpak Mtn	flt	sel	vein qz w/ stb, val													

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
316	11229	<5	0.017	3.68	698	<10	13	19	19	<20	<20	16	1.39	1.24	3.88	<0.01	0.04	196	7	2	26	<1	<5	<10	0.02	<1
316	11230	<5	0.011	4.11	903	<10	43	77	19	<20	<20	19	1.75	1.45	0.52	0.02	0.27	28	10	2	26	<1	<5	<10	0.03	<1
317	11077	20	0.070	4.50	727	<10	122	200	35	<20	<20	12	1.95	1.17	7.73	0.11	0.53	206	11	2	20	<1	<5	<10	0.08	4
317	11078	13	0.018	3.89	1113	<10	87	190	31	<20	<20	41	1.83	1.07	7.47	0.08	0.31	250	24	<2	14	<1	10	<10	0.09	1
318	11097	25	0.015	2.68	527	<10	204	216	36	<20	<20	15	1.76	1.32	>10.00	0.10	0.49	264	12	2	18	<1	<5	<10	0.06	5
318	11098	7	0.060	6.51	1521	<10	78	164	35	<20	<20	38	2.26	0.83	8.42	0.08	0.28	266	34	<2	13	<1	15	<10	0.11	2
318	11099	<5	0.013	2.88	497	<10	22	12	13	<20	<20	11	0.82	1.43	4.97	<0.01	0.03	135	9	<2	14	<1	<5	<10	0.01	<1
318	11100	10	<0.010	3.39	833	<10	298	271	45	<20	<20	18	2.18	1.38	7.91	0.11	0.57	273	19	3	18	<1	8	<10	0.08	2
318	11101	11	0.029	4.50	832	<10	158	216	36	<20	<20	22	1.72	1.84	8.34	0.08	0.40	254	17	<2	13	<1	6	<10	0.1	5
319	11102	<5	0.016	4.36	698	<10	22	20	17	<20	<20	23	1.27	1.15	1.79	<0.01	0.06	58	10	<2	15	<1	<5	<10	<0.01	<1
319	11103	<5	0.012	3.01	832	<10	137	253	35	<20	<20	28	1.74	0.88	5.08	0.11	0.41	169	15	2	12	<1	5	<10	0.09	<1
320	11095	109	0.131	5.46	231	<10	23	83	21	<20	<20	6	0.91	0.30	1.43	0.02	0.03	125	6	<2	2	<1	<5	<10	0.2	2
320	11096	13	0.015	7.27	342	<10	57	202	77	<20	<20	5	1.92	1.57	>10.00	0.06	0.61	297	8	<2	21	<1	<5	<10	0.03	17
321	11073	<5	<0.010	2.16	1199	<10	4	64	14	<20	<20	<1	1.00	0.22	9.64	<0.01	<0.01	167	6	<2	<1	<1	<5	<10	0.11	<1
321	11074	<5	0.039	3.25	479	<10	19	9	11	<20	<20	17	0.73	1.10	5.09	<0.01	0.06	136	11	<2	13	<1	<5	<10	<0.01	2
321	11075	21	0.553	3.01	644	<10	113	167	27	<20	<20	13	1.63	0.82	7.90	0.08	0.42	229	10	2	15	<1	<5	<10	0.05	7
321	11076	89	0.032	3.30	600	<10	148	188	29	<20	25	12	1.52	0.79	8.85	0.10	0.40	256	10	<2	12	<1	<5	<10	0.05	10
322	11092	<5	0.017	1.64	425	<10	17	18	8	<20	<20	3	0.09	0.37	>10.00	<0.01	0.04	212	8	<2	<1	<1	<5	<10	<0.01	<1
322	11093	<5	0.012	2.14	425	<10	13	9	12	<20	<20	8	0.80	1.56	>10.00	<0.01	0.04	74	7	<2	12	<1	<5	<10	<0.01	<1
322	11094	10	0.015	0.72	189	<10	16	28	6	<20	<20	<1	0.35	1.66	>10.00	0.02	0.11	127	3	<2	3	<1	<5	<10	<0.01	<1
323	8049	19.0		1.0		<20	310	200		<200	<2	32				1.80							1.9	1		<500
324	11152	<5	0.532	5.87	136	<10	4	12	2	<20	<20	<1	0.07	0.25	>10.00	0.01	0.05	117	5	<2	<1	<1	<5	<10	<0.01	1
324	11153	<5	0.025	4.28	1296	<10	9	18	26	<20	<20	11	1.49	1.01	0.87	<0.01	0.04	23	7	3	19	<1	<5	<10	<0.01	<1
324	11154	<5	0.033	6.42	1336	<10	120	523	68	<20	<20	12	2.91	1.40	3.21	0.12	0.78	67	8	4	22	<1	8	<10	0.02	<1
324	11192	<5	0.016	1.89	701	<10	29	55	9	<20	<20	11	0.86	0.64	>10.00	0.04	0.15	366	14	<2	11	<1	<5	<10	<0.01	4
325	11193	<5	0.072	5.38	927	<10	67	257	38	<20	<20	6	1.87	1.10	8.66	0.06	0.41	94	6	2	18	<1	<5	<10	<0.01	2
326	11082	6	0.030	3.51	668	<10	97	116	43	<20	<20	7	2.07	1.93	>10.00	0.07	0.54	101	6	3	18	<1	6	<10	0.02	2
327	11083	5	0.011	5.30	1640	<10	71	167	54	<20	<20	10	2.55	1.46	4.28	0.08	0.52	61	6	3	30	<1	7	<10	0.03	<1
328	8034	220.0		5.6		<20	<100	230		<200	2	8				0.21							22.0	<1		<500
329	8027	48.87%																								
329	11049	40.25%	1.180	0.14	52	10	3	82	<1	<20	44	<1	0.01	<0.01	1.61	<0.01	<0.01	26	1	<2	<1	<1	<5	<10	<0.01	<1
329	11111	14.33%	0.420	0.30	87	<10	9	192	1	<20	27	<1	0.03	0.02	3.09	<0.01	0.02	84	3	<2	<1	<1	<5	<10	<0.01	<1
329	11112	65.21%	2.130	0.04	8	14	2	24	<1	<20	69	<1	0.02	<0.01	0.02	<0.01	<0.01	2	<1	<2	<1	<1	<5	<10	<0.01	<1
329	11113	18.66%	0.640	0.29	31	<10	5	217	1	<20	32	<1	0.03	<0.01	0.30	<0.01	0.02	7	1	<2	<1	<1	<5	<10	<0.01	<1
330	8023	2000.0		>10.0		<290	<530	<260		<2400	<8	7				<0.27							<1.0	<2		<1800
330	8024	30.23%																								

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
330	8025	Sukakpak Mtn	flt	sel	vein qz w/ 1-2% stb	<440			<85			<3500	<200	<520	<85	<450		2010
330	8026	Sukakpak Mtn	flt	grab	massive stb boulders													
331	11114	Whiel Mtn.		sed		2			0.6	35	8	47	1	21	10	<0.2	<5	15
331	11115	Whiel Mtn.		pan	minor mag	12	<1	9	1.1	32	11	63	1	14	5	<0.2	<5	12
332	11231	Linda Creek Pass	otc	ran	bio-qz schist near aero-mag anomaly	<5			<0.2	14	<2	39	<1	20	16	<0.2	<5	8
333	11079	Emery Ck		sed		4			0.3	36	5	69	2	30	16	<0.2	<5	16
333	11080	Emery Ck		pan	minor rusty sulfides	65	4	<5	0.5	40	9	92	4	30	12	<0.2	<5	45
333	11081	Emery Ck		pan	from upper bench (clay)	16	6	6	0.5	61	12	86	3	35	17	0.2	<5	41
334	10740	Gold Ck	flt	grab	diorite	<5			<0.2	60	<2	41	1	71	25	<0.2	<5	<5
335	11293	Gold Ck		slu	from 500 cubic yards of gravel	0.17 ppm	<70	<70	0.4	37	221	59	4	32	15	<0.2	<5	1399
336	10697	Linda Ck		slu	no mag, v fine Au visible	88713 ppm			8914.6	1237	>10000	275	3	174	291	<0.2	100	6366
337	11257	Sheep Ck		sed		<5			<0.2	26	9	67	2	22	12	<0.2	<5	18
337	11258	Sheep Ck		pan	tr sulfides, from tailings	446	6	6	<0.2	30	45	64	3	29	11	<0.2	<5	19
338	11341	Magnet Ck		sed		<5			<0.2	17	8	56	<1	19	10	<0.2	<5	8
338	11342	Magnet Ck		pan	1 coarse, 1 fine, 1 v fine Au	267.41 ppm	<5	3	12.8	23	9	48	2	27	10	<0.2	<5	11
339	11294	Gold Ck		slu	from 300 cubic yards of gravel		<70	<70	2.1	54	339	101	2	45	31	<0.2	<5	189
340	11405	Gold Ck		slu	from 200 cyd of sluiced gravel		22	12	96.2	282	8361	120	9	140	166	4.8	47	2570
341	11255	Glacier River trib.		sed		<5			<0.2	32	9	74	<1	33	15	<0.2	<5	13
341	11256	Glacier River trib.		pan	no visible Au, from bedrock	69	7	6	<0.2	57	7	85	2	38	21	<0.2	<5	16
342	11198	Last Chance 1-2		sed		<5			<0.2	28	10	85	1	34	11	0.3	<5	15
342	11199	Last Chance 1-2		pan		16	5	6	<0.2	21	7	69	4	30	8	<0.2	<5	10
343	11196	Billy Glen Ck		sed		<5			<0.2	34	12	93	<1	26	18	<0.2	<5	15
343	11197	Billy Glen Ck		pan	no visible Au, from bedrock	13	9	6	<0.2	36	6	106	3	34	15	<0.2	<5	11
344	11272	Lake Ck		sed		<5			0.2	23	9	56	2	21	9	0.3	<5	14
344	11273	Lake Ck		pan	v fine py and mag	24	10	6	0.3	22	8	57	3	28	8	0.2	<5	13
344	11274	Lake Ck	flt	grab	greenstone w/ 1% euhedral mag	6			<0.2	17	<2.	87	1	28	31	<0.2	<5	<5
345	11237	Lake Ck		pan	2 fine Au, minor mag and py	61.36 ppm	5	5	4.8	35	10	85	4	34	13	0.4	<5	33
345	11238	Lake Ck		sed		<5			0.4	26	8	48	1	21	8	0.3	<5	16
345	11239	Lake Ck		pan	1 fine and 1 v fine Au, tr mag	94.28 ppm	7	5	6.6	35	11	66	3	31	11	0.4	<5	32
345	11269	Lake Ck	flt	sel	black phyllite w/ 1% py	9			0.7	75	17	121	11	54	11	3.1	<5	37
345	11270	Lake Ck		plac	12 coarse, 28 fine, 28 v fine Au	0.067 oz/cyd	<70	<70	1.3	86	203	181	4	49	30	0.7	<5	215
345	11271	Lake Ck	flt	sel	black phyllite w <1% py	<5			1.3	33	13	80	10	21	3	1.4	<5	22
346	11244	Holy Moses Ck		sed		<5			<0.2	31	9	96	2	34	14	0.3	<5	18
346	11245	Holy Moses Ck		pan		193	9	8	<0.2	19	8	73	3	36	10	0.3	<5	11
347	11246	Shamrock Ck		sed		<5			<0.2	40	17	134	2	42	15	0.8	<5	29
348	11252	Wakeup Ck	tail	sel	phyllite w/ 1% diss py	<5			0.9	96	6	32	4	13	3	<0.2	<5	14

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
330	8025	2.54%		5.3		<2800	<3700	<2500		<18000	<50	27				<3.00							<7.2	<11		
330	8026	62.52%																								
331	11114	<5	0.026	2.19	469	<10	20	18	19	<20	<20	9	0.97	1.40	>10.00	<0.01	0.05	61	6	<2	9	<1	<5	<10	<0.01	<1
331	11115	<5	0.014	1.67	326	<10	47	48	20	<20	<20	1	1.02	1.51	>10.00	0.05	0.18	123	4	<2	7	<1	<5	<10	0.04	<1
332	11231	<5	0.012	4.44	965	<10	59	64	79	<20	<20	13	2.08	1.46	1.49	0.03	0.10	80	9	5	15	<1	7	<10	0.05	<1
333	11079	6	0.035	3.97	1084	<10	23	18	24	<20	<20	7	1.22	1.31	3.96	<0.01	0.06	86	6	<2	17	<1	<5	<10	<0.01	<1
333	11080	15	0.050	4.22	1155	<10	85	190	36	<20	<20	4	1.63	1.46	6.66	0.07	0.39	113	6	<2	16	<1	<5	<10	0.02	<1
333	11081	17	0.058	4.28	1170	<10	62	178	30	<20	<20	4	1.31	1.15	7.24	0.06	0.31	132	7	<2	13	<1	<5	<10	0.02	<1
334	10740	19	0.014	3.73	535	<10	7	91	50	<20	<20	2	2.74	2.30	1.10	0.03	0.07	17	8	<2	15	3	<5	<10	0.24	1
335	11293	56	0.150	4.55	827	<10	48	120	25	<20	<20	6	1.00	0.97	5.08	0.02	0.13	116	7	<2	12	<1	<5	<10	0.02	<1
336	10697	91	IS	>10.00	2601	31	14	120	52	247	979	51	0.37	0.5	1.43	<0.01	0.02	52	18	<2	3	8	<5	<10	0.08	9
337	11257	<5	0.024	3.20	900	<10	18	14	17	<20	<20	12	0.91	0.68	1.12	<0.01	0.04	36	7	<2	12	<1	<5	<10	<0.01	<1
337	11258	<5	0.035	3.56	1090	<10	74	298	36	<20	<20	8	1.58	1.01	4.41	0.08	0.35	140	7	2	15	<1	<5	<10	0.02	<1
338	11341	<5	0.014	2.75	666	<10	18	14	20	<20	<20	14	0.92	0.60	0.43	<0.01	0.04	16	6	<2	11	<1	<5	<10	<0.01	<1
338	11342	<5	2.725	3.04	770	<10	49	384	29	<20	<20	9	1.32	0.64	1.15	0.13	0.21	33	7	<2	12	<1	<5	<10	0.04	<1
339	11294	<5	0.140	6.73	1162	<10	40	125	31	<20	<20	5	1.14	1.11	3.27	0.02	0.15	86	7	<2	14	<1	<5	<10	0.01	<1
340	11405	95	5.940	>10.00	916	16	3	89	49	22	1066	62	0.40	0.28	1.42	0.01	0.05	39	21	<2	4	<1	<5	<10	0.10	4
341	11255	<5	0.022	3.48	904	<10	19	24	23	<20	<20	16	1.35	1.06	0.75	<0.01	0.06	41	11	2	15	<1	<5	<10	0.01	<1
341	11256	<5	0.010	4.98	1207	<10	81	266	55	<20	<20	21	2.84	1.59	0.69	0.10	0.69	41	15	5	19	<1	6	<10	0.07	<1
342	11198	<5	0.022	2.68	856	<10	41	14	17	<20	<20	12	1.03	0.67	1.73	<0.01	0.04	36	8	<2	14	<1	<5	<10	<0.01	<1
342	11199	<5	0.022	3.12	604	<10	105	476	34	<20	<20	8	1.53	1.09	3.66	0.05	0.27	72	6	2	16	<1	<5	<10	0.03	3
343	11196	<5	0.036	4.02	2479	<10	77	20	32	<20	<20	19	1.59	0.86	0.32	<0.01	0.08	14	10	3	18	<1	<5	<10	<0.01	<1
343	11197	<5	0.020	5.01	1600	<10	84	473	65	<20	<20	10	2.78	1.30	0.36	0.16	0.62	22	12	5	17	<1	9	<10	0.09	<1
344	11272	<5	0.013	1.97	511	<10	26	8	12	<20	<20	7	0.64	0.93	5.71	<0.01	0.04	96	6	<2	9	<1	<5	<10	<0.01	<1
344	11273	<5	0.018	2.75	633	<10	180	306	40	<20	<20	5	1.47	1.41	7.50	0.05	0.32	153	7	<2	14	<1	<5	<10	0.02	1
344	11274	<5	<0.010	5.99	793	<10	<1	23	83	<20	<20	4	3.09	2.85	1.17	0.02	<0.01	67	5	5	19	<1	<5	<10	0.26	<1
345	11237	<5	0.229	3.81	638	<10	159	279	37	<20	<20	6	1.32	1.33	8.01	0.04	0.27	149	7	<2	13	<1	<5	<10	0.03	2
345	11238	<5	0.014	1.74	488	<10	22	6	9	<20	<20	6	0.45	0.84	6.88	<0.01	0.03	116	6	<2	6	<1	<5	<10	<0.01	<1
345	11239	<5	0.188	3.24	667	<10	160	233	36	<20	<20	6	1.12	1.23	8.78	0.04	0.22	154	8	<2	11	<1	<5	<10	0.05	2
345	11269	5	0.081	2.07	125	<10	71	87	37	<20	<20	7	0.28	1.15	5.02	0.01	0.11	214	9	<2	2	<1	<5	<10	<0.01	9
345	11270	<5	0.240	7.24	609	<10	24	150	43	111	185	5	0.86	1.16	7.30	0.02	0.11	114	7	<2	10	<1	<5	<10	0.04	1
345	11271	9	0.032	0.98	158	<10	316	47	26	<20	<20	3	0.17	0.99	>10.00	<0.01	0.07	626	8	<2	2	<1	<5	<10	<0.01	4
346	11244	<5	0.014	3.83	784	<10	30	24	23	<20	<20	17	1.53	1.13	1.34	<0.01	0.03	25	10	3	19	<1	<5	<10	<0.01	<1
346	11245	<5	0.013	3.24	684	<10	131	402	37	<20	<20	10	1.82	1.35	3.92	0.09	0.29	81	7	2	20	<1	<5	<10	0.04	<1
347	11246	<5	0.027	3.79	725	<10	50	21	25	<20	<20	18	1.51	1.22	1.08	<0.01	0.06	28	12	2	21	<1	<5	<10	0.02	<1
348	11252	<5	0.012	1.24	148	<10	115	15	11	<20	<20	3	0.25	0.45	>10.00	<0.01	0.05	1694	11	<2	4	<1	<5	<10	<0.01	3

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
348	11253	Wakeup Ck		sed		<5			<0.2	29	10	120	1	31	16	0.5	<5	142
348	11254	Wakeup Ck		pan		95	9	6	<0.2	23	7	65	3	36	10	2.2	<5	932
349	11240	Jim Pup		sed		<5			<0.2	26	10	82	1	29	12	0.3	<5	19
349	11241	Jim Pup		pan	1 fine Au, tr mag	22.59 ppm	8	7	0.7	38	9	100	4	40	14	<0.2	<5	18
349	11242	Jim Pup	flt	sel	blk hfls w/ 2% diss po	7			<0.2	25	3	90	10	34	7	0.3	<5	34
350	11202	Califorina Ck		sed		<5			<0.2	37	13	107	2	34	21	<0.2	<5	25
350	11203	Califorina Ck		pan	from cutbank	23	11	5	<0.2	41	12	114	5	54	14	0.4	<5	21
351	11200	Califorina Ck	flt	sel	granite w/ <1% po	8			<0.2	55	7	101	1	40	13	0.7	<5	9
351	11201	Califorina Ck		pan	tr mag	7	7	5	<0.2	46	19	109	4	50	14	0.5	<5	48
352	11288	Sawlog Ck		sed		<5			<0.2	28	10	95	2	33	17	0.4	<5	11
352	11289	Sawlog Ck		pan	no visible Au	18	8	5	<0.2	28	8	95	5	47	20	0.8	<5	10
353	11250	Dennys Gulch		sed		8			<0.2	30	9	93	2	28	12	0.2	<5	12
353	11287	Dennys Gulch		pan		936	13	7	0.3	55	17	137	5	60	18	0.5	<5	30
354	11248	Dennys Gulch		pan	2 coarse angular Au pieces	235.11 ppm	10	10	21.2	94	133	222	4	110	35	0.8	<5	39
354	11249	Dennys Gulch	otc	rep	qz vein w/ abu lim	<5			<0.2	62	5	163	3	38	7	<0.2	<5	7
354	11290	Dennys Gulch	otc	sel	qz vein w/ cpy (?), abu lim	<5			<0.2	46	<2	124	<1	44	13	0.5	<5	<5
355	11291	Minnie Ck		sed		7			<0.2	66	13	125	1	57	23	0.5	<5	25
355	11292	Minnie Ck		pan	1 v fine Au, minor sulfides	6899	9	6	0.6	65	12	138	2	68	24	0.6	<5	27
355	11332	Minnie Ck		sed		18			<0.2	108	16	161	2	75	29	0.4	<5	13
355	11333	Minnie Ck		pan	minor sulfides	44	8	5	<0.2	61	12	125	3	59	17	0.3	<5	10
355	11334	Minnie Ck	flt	sel	blk mica schist w/ 1% py	<5			<0.2	66	3	120	<1	61	21	<0.2	<5	15
355	11343	Minnie Ck	flt	sel	orthogneiss or meta granite w/ po	<5			<0.2	20	4	92	<1	34	10	0.3	<5	7
356	11295	Minnie Ck	otc	sel	qz nodule w/ tr hem (?)	<5			0.9	2	5	725	1	5	<1	5.4	<5	8
356	11296	Minnie Ck		sed		60			<0.2	37	10	103	2	60	20	0.6	<5	31
356	11297	Minnie Ck		pan	no visible Au	36	7	6	<0.2	17	9	71	3	36	9	0.2	<5	11
357	11298	Minnie Ck		sed		<5			<0.2	62	11	135	1	90	36	1.5	<5	15
357	11299	Minnie Ck		pan	minor v fine py and po	19	7	7	<0.2	43	9	140	4	94	36	1.0	<5	30
357	11300	Minnie Ck	flt	sel	marble xcut by qz w/ py, po (?)	<5			1.1	3	9	15	<1	3	<1	<0.2	<5	<5
357	11331	Minnie Ck	otc	ran	qz-mica schist w/ 1% py	<5			0.2	24	9	40	1	33	10	<0.2	<5	10
358	10750	Howard Ck	flt	sel	qz lense in schist w/ lim	<5			<0.2	9	15	24	5	22	3	<0.2	<5	6
358	10751	Howard Ck	flt	sel	vein qz w/ ank (?), lim	<5			<0.2	19	41	22	2	15	4	<0.2	<5	<5
358	10752	Howard Ck	rub	sel	calc-qz-mica schist w/ lim	<5			<0.2	21	8	75	2	51	23	0.6	<5	32
358	10753	Howard Ck	otc	rep	marble w/ minor lt-green alt	<5			2.1	<1	<2	1	<1	<1	<1	<0.2	<5	<5
358	10754	Howard Ck	rub	sel	marble w/ hem (?)	<5			1.9	<1	<2	6	1	2	<1	<0.2	<5	<5
359	10760	Howard Ck	flt	sel	qz-mica schist w/ hem	19			<0.2	80	16	86	2	47	13	0.8	<5	8
360	10755	Howard Ck	rub	sel	marble w/ lim, lt-green alt	<5			1.9	<1	5	9	<1	<1	<1	<0.2	<5	<5

Appendix B - Analytical Results

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
348	11253	<5	0.089	7.96	5928	<10	178	14	19	<20	<20	10	0.97	0.73	1.78	<0.01	0.04	54	9	<2	11	<1	<5	<10	<0.01	<1
348	11254	<5	0.066	3.47	958	<10	153	412	36	<20	<20	8	1.46	1.15	2.77	0.05	0.28	60	6	2	13	<1	<5	<10	0.02	<1
349	11240	<5	0.016	3.04	606	<10	32	19	21	<20	<20	14	1.22	0.84	0.89	<0.01	0.03	20	8	<2	14	<1	<5	<10	0.01	<1
349	11241	<5	0.057	4.13	887	<10	151	489	54	<20	<20	17	2.64	1.10	1.17	0.20	0.61	39	11	4	18	<1	6	<10	0.06	1
349	11242	<5	<0.010	2.34	964	<10	37	48	29	53	<20	11	1.08	0.49	4.04	0.01	<0.01	261	7	4	14	<1	<5	<10	0.09	<1
350	11202	<5	0.033	5.00	736	<10	42	26	25	<20	<20	28	1.59	1.01	0.63	<0.01	0.04	26	11	3	19	<1	<5	<10	<0.01	<1
350	11203	<5	0.011	4.52	505	<10	196	469	53	<20	<20	21	2.76	1.23	0.83	0.12	0.56	55	13	4	28	<1	<5	<10	0.06	8
351	11200	<5	0.015	3.65	720	<10	13	86	28	<20	<20	16	1.44	0.70	1.73	0.05	0.03	67	12	2	22	<1	<5	<10	0.04	2
351	11201	<5	0.019	4.19	485	<10	123	359	39	<20	<20	17	2.08	1.05	4.26	0.09	0.37	177	14	3	22	<1	<5	<10	0.04	7
352	11288	<5	0.027	2.92	675	<10	87	24	28	<20	<20	14	1.26	0.68	0.26	<0.01	0.04	16	7	2	20	<1	<5	<10	0.02	<1
352	11289	<5	0.012	4.17	1864	<10	274	629	46	<20	<20	11	2.00	0.71	0.70	0.07	0.31	30	17	2	20	<1	8	<10	0.05	<1
353	11250	<5	0.045	3.53	437	<10	52	21	30	<20	<20	20	1.22	0.64	0.23	<0.01	0.03	15	8	2	18	<1	<5	<10	0.02	<1
353	11287	<5	0.165	6.69	955	<10	266	424	68	<20	<20	30	2.66	0.70	0.60	0.11	0.50	51	15	3	26	<1	6	<10	0.06	8
354	11248	<5	0.482	8.56	690	<10	116	383	55	93	<20	46	2.42	0.63	0.72	0.10	0.45	46	18	<2	28	<1	<5	<10	0.03	11
354	11249	<5	0.026	7.52	154	<10	6	199	84	<20	<20	8	1.94	1.24	0.05	0.02	0.01	2	8	<2	34	<1	10	<10	<0.01	<1
354	11290	<5	0.026	3.84	376	<10	40	155	39	<20	<20	2	1.88	1.45	0.44	0.02	0.04	11	3	<2	44	<1	<5	<10	<0.01	<1
355	11291	<5	0.011	4.39	496	<10	22	19	21	<20	<20	26	1.48	0.96	1.86	<0.01	0.04	67	16	2	29	<1	<5	<10	<0.01	<1
355	11292	<5	0.023	5.45	661	<10	108	273	40	<20	<20	20	2.48	1.45	2.26	0.11	0.48	89	13	3	32	<1	<5	<10	0.02	4
355	11332	<5	<0.010	4.84	593	<10	21	24	29	<20	<20	34	1.93	0.91	0.64	<0.01	0.04	29	25	3	41	<1	<5	<10	0.01	<1
355	11333	<5	0.040	5.10	713	<10	106	251	47	<20	<20	17	2.59	1.09	1.66	0.09	0.34	69	18	4	39	<1	<5	<10	0.07	7
355	11334	<5	0.018	4.09	218	<10	102	47	31	<20	<20	32	2.13	0.90	0.26	0.05	0.32	20	16	3	38	<1	<5	<10	0.07	8
355	11343	<5	<0.010	3.31	404	<10	35	62	30	<20	<20	10	1.63	0.74	1.09	0.05	0.10	22	10	2	32	<1	<5	<10	0.03	3
356	11295	<5	0.127	0.70	134	<10	27	18	2	<20	<20	<1	0.07	1.10	>10.00	<0.01	0.04	819	5	<2	1	<1	<5	<10	<0.01	<1
356	11296	<5	0.029	3.46	619	<10	41	20	22	<20	<20	21	1.51	1.35	2.28	<0.01	0.04	56	14	2	28	<1	<5	<10	0.01	<1
356	11297	<5	0.012	3.10	504	<10	117	351	35	<20	<20	10	1.97	1.05	3.93	0.15	0.32	122	9	3	25	<1	<5	<10	0.06	5
357	11298	<5	0.019	3.77	770	<10	40	15	15	<20	<20	20	1.04	0.85	0.98	<0.01	0.04	39	15	<2	19	<1	<5	<10	<0.01	<1
357	11299	<5	0.014	5.34	798	<10	178	459	57	<20	<20	18	3.08	1.09	0.69	0.21	0.60	54	11	5	37	<1	<5	<10	0.04	7
357	11300	<5	<0.010	0.50	93	<10	11	24	3	<20	<20	<1	0.09	1.46	>10.00	<0.01	0.04	1036	4	<2	2	<1	<5	<10	<0.01	<1
357	11331	<5	<0.010	2.94	502	<10	34	52	6	<20	<20	9	0.67	1.62	6.73	0.02	0.20	179	11	<2	10	<1	<5	<10	<0.01	<1
358	10750	7	0.028	0.82	74	<10	34	215	9	<20	<20	4	0.53	0.15	0.09	0.02	0.09	9	3	<2	6	<1	<5	<10	<0.01	4
358	10751	9	0.018	1.03	110	<10	29	238	8	<20	<20	12	0.44	0.11	0.30	0.02	0.08	31	12	<2	5	<1	<5	<10	<0.01	10
358	10752	6	0.026	3.32	996	<10	26	76	28	<20	<20	51	1.39	0.73	>10.00	0.02	0.05	167	36	3	18	2	<5	<10	<0.01	3
358	10753	<5	0.018	0.05	34	<10	3	<1	<1	<20	<20	1	<0.01	0.13	>10.00	<0.01	<0.01	274	<1	<2	<1	3	<5	<10	<0.01	<1
358	10754	<5	0.024	0.26	50	<10	1	<1	<1	<20	<20	1	0.01	0.08	>10.00	<0.01	<0.01	124	2	<2	<1	2	<5	<10	<0.01	<1
359	10760	10	0.019	>10.00	4397	<10	22	121	61	<20	<20	73	1.66	0.11	2.64	<0.01	<0.01	139	67	<2	11	<1	<5	<10	0.03	2
360	10755	<5	0.017	0.25	249	<10	<1	1	2	<20	<20	2	<0.01	4.42	>10.00	<0.01	<0.01	231	2	<2	<1	6	<5	<10	<0.01	<1

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
360	10756	Howard Ck	rub	sel	calc-qz-mica schist w/ lim	<5			1.5	7	6	41	<1	10	2	<0.2	<5	6
360	10757	Howard Ck	rub	sel	qz-chl schist w/ py, lim	<5			<0.2	16	39	455	1	3	4	1.7	<5	<5
360	10758	Howard Ck	flt	sel	phyllite w/ diss py, tr lim	19			0.3	56	20	7	21	60	39	<0.2	<5	131
360	10759	Howard Ck	flt	sel	marble w/ py, lim	<5			2.3	86	16	165	3	28	4	0.8	<5	23
361	11335	Marion Ck		sed		<5			<0.2	44	13	109	2	32	13	<0.2	<5	14
361	11336	Marion Ck		pan	1 fine Au flake	3739	10	7	<0.2	44	11	103	3	36	12	<0.2	<5	15
361	11337	Marion Ck	flt	sel	dark gray qtz w/ 1% po	<5			<0.2	8	5	72	<1	27	7	0.2	<5	12
361	11338	Marion Ck trib.		sed		<5			<0.2	35	12	107	<1	31	14	<0.2	<5	24
361	11339	Marion Ck trib.		pan	1 coarse, 6 fine, 2 v fine Au	81.80 ppm	9	7	7.2	65	17	147	3	50	16	0.3	<5	60
361	11340	Marion Ck trib.		plac	4 fine, 24 v fine Au	0.006 oz/cyd	<70	<70	4.1	69	90	137	2	53	31	0.3	<5	601
362	10737	Sawyer Ck		sed		<5			0.2	36	29	100	1	33	13	0.3	<5	29
362	10738	Sawyer Ck		pan	no mag	1632			0.5	64	36	114	2	76	29	<0.2	<5	51
362	10739	Sawyer Ck	flt	sel	ch-qz schist w/ py, lim	<5			<0.2	123	5	60	1	68	35	<0.2	<5	<5
363	10882	Emma Dome	rub	sel	vein qz w/ tm, hem, sid	<5			<0.2	11	4	13	1	7	3	<0.2	<5	17
364	11319	Kelly's Gulch		sed		27			<0.2	28	13	64	1	35	13	<0.2	<5	11
364	11320	Kelly's Gulch		pan	no mag, from gravel bar	73	6	6	0.2	51	22	103	3	71	24	0.3	<5	19
365	11317	Clara Ck		sed		21			<0.2	63	17	88	1	73	20	0.3	<5	12
365	11318	Clara Ck		pan	1 coarse, subround Au flake	198.93 ppm	8	7	13.5	50	15	146	3	108	71	1.1	<5	9
366	11310	Myrtle Ck		sed		<5			<0.2	44	17	130	1	43	20	<0.2	<5	13
366	11311	Myrtle Ck		pan	2 fine Au	9790	11	8	0.9	72	19	154	3	67	22	0.3	<5	21
366	11312	Myrtle Ck		slu	placer con	0.230 grams	<70	<70	14.1	80	1099	106	10	115	146	0.9	<5	710
366	11313	Myrtle Ck	flt	sel	bio-qz schist w/ 20% py	23			0.2	55	71	166	33	113	21	1.2	<5	80
367	11321	Porcupine Ck		slu	from 3,000 cyd of sluiced gravel		16	5	15.2	168	7896	427	41	170	63	7.1	14	69
367	11322	Porcupine Ck	otc	sel	qz-mica schist w/ <10% euhedral py	33			0.5	97	30	98	27	61	18	1.1	<5	97
367	11323	Porcupine Ck		sed		<5			<0.2	52	13	88	2	49	18	0.4	<5	13
367	11324	Porcupine Ck		pan	from bedrock	26.82 ppm	<5	5	5.2	86	27	152	4	112	36	0.7	<5	18
367	11325	Quartz Ck		sed		<5			<0.2	56	14	132	2	71	26	0.6	<5	13
367	11326	Quartz Ck		pan	from gravel bar	135	6	5	<0.2	48	11	109	3	62	20	0.4	<5	10
368	11314	Rosie Ck		sed		<5			<0.2	35	12	114	2	40	16	0.3	<5	10
368	11315	Rosie Ck		pan	1 fine, angular Au flake	2668	7	8	<0.2	38	9	103	4	52	16	0.5	<5	10
368	11316	Rosie Ck	flt	sel	meta qtz w/ 2% euhedral py	30			<0.2	45	12	65	1	28	20	<0.2	<5	12
369	11327	Twelvemile Ck		sed		<5			<0.2	14	9	74	<1	26	10	<0.2	<5	6
369	11328	Twelvemile Ck		pan	6 fine, flat Au flakes	170.61 ppm	5	6	11.0	33	9	110	2	59	18	0.3	<5	8
370	10640	Tramway Bar	coal sample (see text)															
371	10549	Tramway Bar	coal sample (see text)															
371	10550	Tramway Bar	coal sample (see text)															

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
360	10756	<5	0.011	2.21	282	<10	14	23	10	<20	<20	8	1.34	1.09	>10.00	0.02	0.05	165	7	<2	23	4	<5	<10	<0.01	<1
360	10757	<5	0.233	1.64	746	<10	72	88	2	<20	<20	24	0.44	0.35	2.92	0.03	0.27	402	13	<2	2	<1	<5	<10	<0.01	10
360	10758	11	0.232	6.90	24	<10	8	51	15	<20	<20	10	0.44	<0.01	0.03	0.03	0.23	10	2	<2	<1	<1	<5	<10	<0.01	11
360	10759	9	0.220	8.26	66	<10	16	3	4	<20	<20	4	0.17	0.08	>10.00	0.03	0.03	185	5	<2	1	<1	<5	<10	<0.01	5
361	11335	<5	0.026	4.01	308	<10	26	18	22	<20	<20	24	1.36	0.62	0.14	<0.01	0.05	13	11	<2	29	<1	<5	<10	<0.01	<1
361	11336	<5	0.041	4.72	384	<10	149	329	37	<20	<20	19	2.00	0.72	0.15	0.07	0.40	22	9	3	31	<1	<5	<10	0.02	9
361	11337	<5	<0.010	2.57	141	<10	52	109	28	<20	<20	13	1.31	0.58	0.11	0.03	0.11	8	8	<2	29	<1	<5	<10	0.04	4
361	11338	<5	0.017	3.50	313	<10	21	16	21	<20	<20	24	1.13	0.53	0.13	<0.01	0.04	15	10	<2	23	<1	<5	<10	<0.01	<1
361	11339	<5	0.140	5.69	574	<10	212	433	55	<20	<20	27	2.81	0.69	0.17	0.13	0.62	39	14	4	31	<1	<5	<10	0.05	10
361	11340	<5	18.930	7.70	930	<10	82	229	46	<20	49	25	1.55	0.49	0.29	0.03	0.17	26	18	<2	22	<1	<5	<10	0.05	4
362	10737	<5	0.063	2.80	690	<10	28	12	15	<20	<20	19	0.72	1.38	2.65	<0.01	0.03	58	10	<2	10	<1	<5	<10	<0.01	1
362	10738	<5	0.131	6.32	632	<10	39	101	23	<20	<20	25	1.27	1.35	5.25	0.02	0.12	82	10	<2	15	<1	<5	<10	0.03	4
362	10739	10	0.031	5.79	457	<10	37	132	124	<20	<20	3	3.38	3.34	0.72	0.03	0.04	22	11	<2	38	4	6	<10	0.35	<1
363	10882	<5	0.013	0.69	110	<10	1	228	1	<20	<20	<1	0.01	0.31	0.75	<0.01	<0.01	15	1	<2	<1	<1	<5	<10	<0.01	1
364	11319	<5	0.019	2.68	389	<10	39	15	13	<20	<20	21	0.79	0.66	0.75	<0.01	0.04	26	11	<2	10	<1	<5	<10	<0.01	<1
364	11320	<5	0.055	6.04	496	<10	184	271	40	<20	<20	17	2.24	1.29	0.94	0.08	0.40	43	12	3	25	<1	<5	<10	0.04	5
365	11317	<5	0.106	3.12	226	<10	117	13	20	<20	<20	93	1.14	0.44	0.44	<0.01	0.09	26	23	2	18	<1	<5	<10	<0.01	<1
365	11318	<5	0.953	5.18	1560	<10	150	335	42	<20	<20	53	2.17	0.79	0.33	0.08	0.39	35	22	4	33	<1	<5	<10	0.02	<1
366	11310	<5	0.055	4.81	504	<10	59	23	26	<20	<20	41	1.48	0.68	0.16	<0.01	0.05	16	9	3	30	<1	<5	<10	<0.01	<1
366	11311	<5	0.492	7.84	489	<10	180	328	55	<20	<20	59	3.15	0.91	0.18	0.16	0.54	39	14	4	45	<1	<5	<10	<0.01	10
366	11312	<5	4.410	>10.00	756	<10	2	200	43	91	59	62	0.93	0.31	0.28	0.02	0.10	26	20	<2	16	<1	<5	<10	0.04	7
366	11313	<5	0.323	>10.00	216	<10	6	107	9	<20	<20	17	0.39	0.17	0.37	0.01	0.20	20	9	<2	3	<1	<5	<10	<0.01	11
367	11321	13	21.800	>10.00	1292	<10	26	285	303	<20	418	11	0.35	0.15	0.13	<0.01	0.04	9	7	<2	5	14	<5	<10	0.02	6
367	11322	<5	0.271	6.60	128	<10	13	131	17	<20	<20	5	1.01	0.64	0.15	0.02	0.22	8	5	<2	16	<1	<5	<10	<0.01	14
367	11323	<5	0.029	3.38	508	<10	22	15	16	<20	<20	26	0.8	0.80	2.62	<0.01	0.04	88	16	<2	14	<1	<5	<10	<0.01	<1
367	11324	<5	0.430	7.40	821	<10	186	280	47	<20	<20	36	2.35	1.10	1.70	0.10	0.49	79	19	3	30	<1	<5	<10	0.02	7
367	11325	<5	0.035	4.70	680	<10	51	30	34	<20	<20	36	1.64	0.88	0.22	<0.01	0.07	15	18	2	30	<1	<5	<10	0.02	<1
367	11326	<5	0.028	4.94	845	<10	190	353	58	<20	<20	15	2.29	0.97	0.64	0.08	0.37	44	17	3	29	<1	<5	<10	0.08	5
368	11314	<5	0.132	3.60	675	<10	352	24	43	<20	<20	9	1.53	0.62	0.35	<0.01	0.05	18	7	3	26	<1	<5	<10	0.02	<1
368	11315	<5	0.087	5.38	1558	<10	904	462	100	<20	<20	19	2.74	0.85	1.22	0.12	0.40	47	16	5	26	<1	8	<10	0.18	7
368	11316	<5	0.033	4.66	235	<10	40	100	38	<20	<20	10	1.46	1.00	0.16	0.04	0.12	8	14	2	26	<1	<5	<10	<0.01	2
369	11327	<5	0.028	2.59	390	<10	60	17	22	<20	<20	19	1.21	0.59	0.22	<0.01	0.04	15	6	<2	22	<1	<5	<10	<0.01	<1
369	11328	<5	1.416	5.43	740	<10	158	278	57	<20	<20	16	2.89	1.35	0.38	0.08	0.38	30	9	4	48	<1	<5	<10	0.04	7
370	10640	coal sample (see text)																								
371	10549	coal sample (see text)																								
371	10550	coal sample (see text)																								

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
371	10551	Tramway Bar		pan	from qz pebble cgl, no visible Au	2494			<0.2	23	9	115	2	43	11	0.5	<5	9
372	8007	Gold Bench Mine		slu	placer con	7	<5	<1	<5			<200	<2	61	15	<10		7
373	11009	Douglas Ck		sed		8			<0.2	117	6	128	3	50	25	0.5	<5	13
373	11010	Douglas Ck		pan	no mag, no visible Au	7	14	6	<0.2	115	4	133	3	63	28	0.7	<5	12
373	11011	Douglas Ck		pan	mod fine and coarse mag	9	8	6	<0.2	106	<2	124	3	60	29	0.7	<5	11
373	11012	Douglas Ck		pan	from colluvium	14	9	3	<0.2	99	10	117	6	59	25	0.8	<5	17
374	10661	Prospect Ck	tail	rand	pyroxenite ?	10			<0.2	106	<2	81	<1	629	64	<0.2	<5	<5
374	10662	Prospect Ck	otc	rand	pyroxenite w/ tr py	<5			<0.2	98	<2	63	<1	56	28	<0.2	<5	<5
375	11014	Jim River		pan	1 v fine Au, abu fine mag	1590	5	1	<0.2	19	6	50	4	31	12	<0.2	<5	10
375	11015	Jim River		plac	13 v fine Au, zircon	0.0003 oz/cyd	5	3	<0.2	21	6	54	2	23	13	<0.2	<5	11
376	11031	Jim River		pan	from bedrock, 4 v fine Au	1231	<5	5	<0.2	86	8	115	5	79	25	0.5	<5	12
376	11032	Jim River		sed		3			<0.2	21	6	76	1	22	11	<0.2	<5	7
376	11033	Jim River	otc	ran	silicious volcanic rock w/ lim	<1			<0.2	33	4	32	7	27	7	<0.2	<5	<5
377	10999	N Fork Bonanza Ck		sed		8			<0.2	15	7	80	1	23	13	<0.2	<5	8
377	11000	N Fork Bonanza Ck		pan	abu mag	4	5	<1	<0.2	8	3	41	4	14	8	<0.2	<5	5
378	11007	Bonanza Ck		sed		29			<0.2	19	7	84	2	27	14	0.2	<5	7
378	11008	Bonanza Ck		pan		12	<5	<1	<0.2	13	5	45	4	19	9	<0.2	<5	7
379	10987	Bonanza	trn	sel	skarn w/ <10% po, tr cpy and sch	12			16.0	404	732	1438	4	16	5	123.1	45	165
379	10988	Bonanza	trn	sel	skarn w/ <1% po, tr gn, tr cpy	13			24.3	44	936	746	2	9	2	9.6	96	16
379	10989	Bonanza	trn	sel	skarn w/ diss po, lim	2			8.7	203	260	554	5	18	6	60.2	34	8
379	11030	Bonanza	otc	cont	3.5 ft-wide skarn w/ <1% po, tr cpy	<1			0.6	65	13	97	2	57	15	2.4	<5	8
380	8005	Caribou Mtn	otc	rand	chromite lenses in dunite	<5	<5	<1	<5			680	<2	2180	230	<10		12
380	8006	Caribou Mtn	rub	grab	chromite lenses in dunite	<5	<5	<1	<5			540	<2	1700	240	<10		2
381	8003	Sithylemenkat Pluton	flt	grab	greisen vein w/ cst, ser, tm (?)	<5	<5	<1	<5			2400	<2	23	<10	<10		1
381	8004	Sithylemenkat Pluton	flt	grab	greisen vein w/ cst, ser, tm (?)	<5	<5	<1	<5			300	8	<20	<10	<10		6
382	8001	Sithylemenkat Lake	rub	grab	serp gabbro, pyroxenite, dunite	<5	<5	<1	<5			<200	<2	960	78	<10		2
382	8002	Sithylemenkat Lake	rub	grab	serp dunite w/ mag	<5	6	1	<5			<200	<2	2140	120	<10		3
383	10565	Lake Todatonten		sed		<5			<0.2	21	9	87	<1	38	15	0.2	<5	9
384	10564	Lake Todatonten		sed	unidentifiable 3 mm rock chips	<5			<0.2	23	10	84	<1	35	13	0.2	<5	10
385	10563	Lake Todatonten		sed		<5			<0.2	36	10	98	<1	45	16	0.2	<5	8
386	10562	Lake Todatonten		sed		<5			<0.2	31	11	97	<1	40	15	0.4	<5	7
387	10561	Lake Todatonten		sed		<5			<0.2	26	9	93	<1	38	15	0.3	<5	7
388	10586	Lake Todatonten	flt	grab	medium to fine grained gwy	<5			<0.2	37	7	109	<1	47	19	0.4	<5	7
388	10587	Lake Todatonten		soil	lt-tan clayey soil	9			<0.2	35	11	83	3	33	13	<0.2	<5	11
389	10584	Lake Todatonten	flt	grab	slts, coarse grained gwy	<5			<0.2	32	9	85	<1	49	15	0.3	<5	6
389	10585	Lake Todatonten		soil	orange-brn clayey soil	<5			<0.2	30	14	59	2	19	6	<0.2	<5	38

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
371	10551	<5	0.043	4.73	379	<10	126	239	35	<20	<20	14	2.02	0.57	0.12	0.05	0.34	16	5	3	23	1	<5	<10	<0.01	7
372	8007	2.3		4.8		<20	690	180		<200	4	30				1.50							16.0	1		<500
373	11009	<5	0.147	5.06	1534	<10	501	51	124	<20	<20	10	3.04	1.36	0.94	0.02	0.08	36	11	3	21	2	8	<10	0.17	<1
373	11010	<5	0.031	6.59	2049	<10	252	135	169	<20	<20	5	3.27	1.91	2.01	0.04	0.08	31	10	4	20	<1	9	<10	0.35	<1
373	11011	<5	0.033	6.21	1590	<10	220	118	161	<20	<20	5	3.26	1.87	2.11	0.04	0.09	27	10	4	19	<1	9	<10	0.34	4
373	11012	<5	0.090	5.63	1125	<10	270	172	165	<20	<20	11	3.02	1.56	2.04	0.03	0.20	33	12	5	18	<1	11	<10	0.38	14
374	10661	<5	0.015	6.65	823	<10	81	259	36	29	<20	2	2.27	8.69	1.05	0.09	0.14	52	3	4	5	<1	<5	<10	0.05	3
374	10662	<5	<0.010	5.21	690	<10	114	54	158	<20	<20	5	3.86	2.04	3.05	0.08	0.05	41	8	10	22	4	9	<10	0.30	12
375	11014	<5	0.023	8.59	1064	<10	89	285	249	<20	<20	77	1.33	0.53	1.20	0.05	0.12	36	36	<2	12	3	<5	<10	0.32	9
375	11015	<5	0.282	>10.00	1295	<10	93	226	429	<20	<20	96	1.21	0.44	1.24	0.04	0.08	28	43	4	10	<1	5	<10	0.33	10
376	11031	<5	0.080	5.65	1664	<10	1227	165	148	<20	<20	20	2.96	2.21	1.13	0.03	0.28	50	16	3	36	2	12	<10	0.28	15
376	11032	<5	0.032	2.97	477	<10	187	26	64	<20	<20	22	1.38	0.65	0.51	0.02	0.15	25	7	<2	21	1	<5	<10	0.10	<1
376	11033	<5	0.085	1.15	415	<10	223	218	15	<20	<20	2	0.82	0.30	0.34	0.01	0.10	17	3	<2	6	<1	<5	<10	0.03	4
377	10999	<5	0.025	3.40	385	<10	165	31	77	<20	<20	27	1.95	0.84	0.47	0.02	0.37	38	8	3	27	2	<5	<10	0.14	<1
377	11000	<5	<0.010	6.64	656	<10	67	289	183	<20	<20	60	0.93	0.44	0.81	0.05	0.25	21	52	<2	12	4	<5	<10	0.34	8
378	11007	<5	0.025	2.91	347	<10	81	26	39	<20	<20	19	1.76	0.71	0.27	0.02	0.11	23	5	2	29	<1	<5	<10	0.04	<1
378	11008	<5	<0.010	1.99	397	<10	46	324	20	<20	<20	23	0.85	0.31	0.21	0.02	0.10	9	7	<2	14	1	<5	<10	0.09	1
379	10987	38	0.051	4.06	590	<10	3	100	21	<20	1.44%	7	0.92	0.33	2.12	0.07	0.02	78	5	<2	7	<1	<5	<10	0.08	7
379	10988	<5	0.085	1.29	753	<10	10	145	31	<20	0.11%	8	1.97	0.14	5.53	0.01	0.03	79	5	6	4	<1	<5	<10	0.12	11
379	10989	<5	<0.010	3.00	426	<10	22	111	33	<20	0.54%	12	2.73	0.49	2.94	0.15	0.13	249	10	4	16	<1	<5	<10	0.13	9
379	11030	<5	<0.010	3.88	715	<10	69	109	84	<20	<20	17	3.25	2.16	3.04	0.07	0.25	201	9	7	82	2	9	<10	0.08	<1
380	8005	1.8		>10.0		<20	<100	>30000		<200	<2	<5				0.18							4.7	<1		<500
380	8006	1.5		>10.0		<20	<100	>30000		<200	<2	<5				0.15							7.6	<1		<500
381	8003	0.7		>10.0		<20	140	140		1900	27	46				0.08							2.6	2		<500
381	8004	0.8		5.1		<20	<100	160		<200	<2	6				0.37							1.8	2		<500
382	8001	1.4		4.4		<20	<100	3100		<200	<2	<5				0.22							18.0	<1		<500
382	8002	1.6		5.7		<20	<100	5020		<200	6	<5				0.20							5.2	<1		<500
383	10565	<5	0.041	3.83	280	<10	116	40	64	<20	<20	21	2.14	0.71	0.45	0.01	0.06	36	10	<2	27	3	5	<10	0.10	5
384	10564	<5	0.061	3.58	264	<10	147	37	60	<20	<20	19	2.22	0.64	0.35	0.01	0.07	23	10	<2	25	3	5	<10	0.05	3
385	10563	<5	0.166	3.95	322	<10	161	50	70	<20	<20	16	2.73	0.80	0.32	0.01	0.09	23	11	4	34	4	7	<10	0.04	3
386	10562	<5	0.125	3.51	326	<10	155	43	59	<20	<20	17	2.46	0.74	0.43	0.02	0.09	34	11	3	30	4	6	<10	0.04	3
387	10561	<5	0.049	3.36	516	<10	161	38	57	<20	<20	16	2.14	0.69	0.48	0.02	0.09	27	10	<2	24	3	5	<10	0.05	4
388	10586	<5	0.213	4.21	679	<10	123	92	89	<20	<20	8	2.23	1.46	0.42	0.02	0.12	14	9	5	35	10	8	<10	0.12	12
388	10587	<5	0.067	5.59	387	<10	128	59	120	<20	<20	10	2.82	0.69	0.10	<0.01	0.12	10	4	<2	39	8	7	<10	0.06	3
389	10584	<5	0.240	4.65	388	<10	103	82	84	<20	<20	4	2.36	1.20	0.15	0.02	0.12	8	6	5	32	10	6	<10	0.03	11
389	10585	<5	0.082	5.36	183	<10	140	38	104	<20	<20	9	2.25	0.31	0.08	<0.01	0.06	10	2	7	20	3	<5	<10	<0.01	2

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
390	10567	Lake Todatonten	rub	grab	gwy	<5			<0.2	42	15	131	<1	60	27	0.3	<5	13
391	10566	Lake Todatonten	rub	grab	fissle gwy and slts	<5			<0.2	44	16	144	<1	61	24	0.4	<5	12
392	10559	Lake Todatonten		sed		<5			<0.2	20	7	70	<1	35	13	<0.2	<5	6
392	10560	Lake Todatonten		pan	mod mag	<5			<0.2	9	7	21	<1	16	7	<0.2	<5	<5
393	10527	Lake Todatonten	flt	grab	fine grained gwy	<5			<0.2	54	8	118	<1	74	28	0.5	<5	6
393	10528	Lake Todatonten		soil	lt-brn clayey soil	<5			<0.2	21	9	77	1	21	11	<0.2	<5	11
394	10580	Lake Todatonten	flt	grab	gwy/ slts, shows graded bedding	<5			<0.2	67	7	107	<1	77	28	0.4	<5	13
394	10581	Lake Todatonten		soil	red-brn clayey soil	<5			<0.2	18	7	86	<1	27	11	<0.2	<5	9
395	10582	Lake Todatonten	flt	grab	50% slts, 50% mudstone	<5			<0.2	60	9	104	<1	55	18	0.2	<5	10
395	10583	Lake Todatonten		soil	lt-brn soil w/ low clay content	<5			0.2	14	9	69	1	15	10	<0.2	<5	8
396	10557	Lake Todatonten		pan	abu mag, abu qz grains	<5			<0.2	8	9	23	1	16	9	<0.2	<5	6
396	10558	Lake Todatonten		sed		<5			<0.2	17	6	65	<1	33	11	<0.2	<5	<5
397	10571	Lake Todatonten	rub	grab	gwy w/ shale partings	8			<0.2	42	11	99	1	56	23	0.4	<5	9
398	10568	Lake Todatonten	rub	grab	slightly calc gwy	<5			<0.2	53	8	120	<1	73	30	0.4	<5	7
399	10569	Lake Todatonten	rub	grab	black, fissle shale; minor gwy	<5			<0.2	69	18	132	<1	66	17	0.4	<5	14
400	10570	Lake Todatonten		soil	red-brn clayey soil w/ shale chips	<5			<0.2	14	11	94	<1	22	10	<0.2	<5	8
401	10555	Lake Todatonten		sed		<5			0.2	40	9	108	<1	57	18	0.2	<5	8
401	10556	Lake Todatonten		pan	minor mag, abu qz grains	397			<0.2	21	13	64	1	42	15	<0.2	<5	9
401	10945	Lake Todatonten		sed	confirmation sample	3			0.2	38	9	104	1	53	16	<0.2	<5	8
401	10946	Lake Todatonten		pan	confirmation sample	5	<5	1	<0.2	30	9	99	3	53	17	<0.2	<5	11
402	10554	Lake Todatonten		sed		<5			<0.2	37	9	108	<1	52	18	0.3	<5	8
403	10578	Lake Todatonten	flt	grab	medium to fine grained gwy	<5			<0.2	50	13	100	<1	53	22	0.3	<5	13
403	10579	Lake Todatonten		soil	brn clayey soil, w/ gwy chips	<5			<0.2	14	8	39	1	12	4	<0.2	<5	7
404	10577	Lake Todatonten	flt	grab	medium to fine grained gwy	<5			<0.2	23	19	92	1	37	15	<0.2	<5	13
405	10575	Lake Todatonten	flt	grab	gwy, medium to fine grained	<5			<0.2	42	8	118	<1	53	26	0.5	<5	10
405	10576	Lake Todatonten		soil	red-orange soil w/ gwy chips	<5			<0.2	16	8	114	<1	20	10	0.3	<5	7
406	10572	Lake Todatonten	flt	grab	gwy	<5			<0.2	29	12	95	1	37	14	0.3	<5	7
407	10573	Lake Todatonten	flt	grab	gwy, intermediate grain size	9			<0.2	45	8	107	1	52	27	0.4	<5	15
408	10574	Lake Todatonten		soil	red-brn clayey soil	<5			<0.2	30	12	142	1	37	18	<0.2	<5	13
409	10619	Gen Ck		sed		<5			<0.2	23	8	90	<1	38	17	0.2	<5	7
409	10620	Gen Ck		pan		<5			<0.2	51	22	139	<1	88	40	0.3	<5	16
410	10624	Discovery Ck		pan	3 pan comp, 1 fine Au, minor mag	<5			<0.2	9	12	38	1	19	13	0.3	<5	10
410	10625	Discovery Ck		sed		<5			<0.2	17	4	67	<1	29	13	<0.2	<5	6
411	10621	Red Mtn	rub	rand	latite porphyry w/ <1% po, lim	25			<0.2	55	5	38	3	23	11	<0.2	<5	20
411	10622	Red Mtn	otc	rand	qtz/ v fine intr (?) w/ 1% po	13			<0.2	86	<2	63	<1	68	22	<0.2	<5	9
411	10623	Red Mtn	flt	grab	latite porpyry	13			<0.2	63	5	51	3	45	17	0.2	<5	19

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
390	10567	<5	0.042	5.41	688	<10	125	99	101	<20	<20	21	2.83	1.41	0.66	0.02	0.16	19	13	6	43	12	10	<10	0.28	24
391	10566	<5	0.035	5.41	871	<10	132	93	78	<20	<20	25	2.91	1.24	0.59	0.02	0.16	19	13	6	42	10	8	<10	0.17	14
392	10559	<5	0.091	2.74	244	<10	103	39	52	<20	<20	14	1.80	0.66	0.44	0.01	0.07	30	8	<2	22	3	<5	<10	0.08	4
392	10560	<5	0.021	1.24	146	<10	57	127	24	<20	<20	16	0.66	0.21	0.30	0.03	0.07	16	8	<2	7	3	<5	<10	0.11	6
393	10527	<5	0.137	5.18	762	<10	210	133	127	<20	<20	14	2.76	2.11	0.66	0.02	0.14	19	12	5	41	14	12	<10	0.35	20
393	10528	<5	0.059	3.80	351	<10	142	42	124	<20	<20	10	2.16	0.42	0.18	<0.01	0.06	11	3	<2	22	6	5	<10	0.18	3
394	10580	<5	0.196	6.04	724	<10	114	127	137	<20	<20	17	3.13	2.28	0.61	0.02	0.14	15	11	6	44	15	13	<10	0.37	22
394	10581	<5	0.034	3.92	318	<10	136	43	99	<20	<20	12	2.30	0.53	0.19	<0.01	0.07	13	3	<2	29	5	<5	<10	0.12	3
395	10582	<5	0.139	5.02	439	<10	109	76	87	<20	<20	13	2.70	1.38	0.35	0.01	0.13	11	9	6	33	11	7	<10	0.17	15
395	10583	<5	0.037	3.19	934	<10	156	34	93	<20	<20	14	1.96	0.31	0.16	<0.01	0.07	12	3	3	10	3	<5	<10	0.07	<1
396	10557	<5	0.017	1.84	282	<10	48	162	57	<20	<20	63	0.65	0.24	0.48	0.02	0.05	18	23	2	6	8	<5	<10	0.25	11
396	10558	<5	0.120	2.59	223	<10	91	38	51	<20	<20	15	1.60	0.63	0.38	0.01	0.06	19	8	<2	19	3	<5	<10	0.09	4
397	10571	<5	0.179	4.54	1422	<10	122	119	102	<20	<20	10	2.36	1.42	0.44	0.02	0.16	13	11	5	31	12	9	<10	0.20	16
398	10568	<5	0.182	5.66	896	<10	171	115	119	<20	<20	13	2.93	1.86	0.72	0.02	0.15	21	13	6	43	13	12	<10	0.22	17
399	10569	<5	0.152	5.83	338	<10	125	74	89	<20	<20	4	3.33	1.35	0.08	0.02	0.18	8	5	7	52	11	7	<10	<0.01	14
400	10570	<5	0.050	3.77	799	<10	138	38	87	<20	<20	12	2.55	0.38	0.12	<0.01	0.08	10	2	6	25	2	<5	<10	0.02	<1
401	10555	<5	0.245	4.29	409	<10	142	63	84	<20	<20	12	2.98	1.01	0.69	0.01	0.10	45	14	<2	41	4	9	<10	0.08	4
401	10556	<5	0.045	3.65	359	<10	116	148	72	<20	<20	17	1.88	0.72	0.48	0.04	0.14	24	8	4	25	8	6	<10	0.18	11
401	10945	<5	0.261	4.04	473	<10	153	58	82	<20	<20	13	2.61	1.07	0.64	0.01	0.10	42	13	3	43	1	7	<10	0.06	<1
401	10946	<5	0.073	4.67	476	<10	144	246	96	<20	<20	11	2.35	1.11	0.54	0.03	0.17	26	10	3	35	2	7	<10	0.17	7
402	10554	<5	0.129	3.78	434	<10	166	52	69	<20	<20	17	2.48	0.90	0.63	0.02	0.10	37	12	<2	29	4	7	<10	0.09	5
403	10578	<5	0.054	5.39	842	<10	102	79	91	<20	<20	19	2.89	1.28	0.51	0.02	0.18	15	12	6	36	11	9	<10	0.21	20
403	10579	<5	0.045	2.36	182	<10	58	25	85	<20	<20	14	1.51	0.24	0.15	<0.01	0.06	10	3	4	7	4	<5	<10	0.04	<1
404	10577	<5	0.023	3.48	464	<10	155	68	67	<20	<20	34	2.11	1.13	0.62	0.02	0.22	22	10	5	26	8	7	<10	0.25	28
405	10575	<5	0.035	6.00	872	<10	145	110	163	<20	<20	12	3.10	2.10	0.91	0.03	0.09	33	12	8	43	18	15	<10	0.34	23
405	10576	<5	0.043	3.84	568	<10	169	40	114	<20	<20	12	2.47	0.43	0.20	<0.01	0.07	16	3	3	27	4	<5	<10	0.11	1
406	10572	<5	0.034	4.11	413	<10	104	61	45	<20	<20	16	2.25	0.89	0.39	0.02	0.18	11	11	5	30	6	<5	<10	0.16	11
407	10573	<5	0.042	5.36	890	<10	294	95	140	<20	<20	16	2.82	1.92	1.15	0.03	0.13	44	14	7	41	16	15	<10	0.32	25
408	10574	<5	0.032	4.94	630	<10	264	54	126	<20	<20	11	3.32	0.80	0.29	<0.01	0.06	20	3	<2	45	5	7	<10	0.19	4
409	10619	<5	0.055	3.31	415	<10	183	42	63	<20	<20	19	2.31	0.79	0.58	0.02	0.09	37	11	<2	24	4	6	<10	0.09	3
409	10620	<5	0.040	7.57	1065	<10	179	107	106	<20	<20	17	3.42	1.83	0.46	0.02	0.15	21	10	8	50	12	9	<10	0.18	17
410	10624	<5	0.130	5.60	1701	<10	167	115	98	<20	<20	160	1.96	0.40	1.49	0.01	0.03	38	43	7	9	10	15	<10	0.21	10
410	10625	<5	0.034	2.83	552	<10	87	30	54	<20	<20	15	1.69	0.70	0.63	<0.01	0.05	30	9	<2	20	3	5	<10	0.10	3
411	10621	<5	0.021	3.43	253	<10	151	65	42	<20	<20	11	2.32	1.11	0.80	0.16	0.14	103	4	6	14	6	<5	<10	0.10	11
411	10622	<5	<0.010	5.74	562	<10	121	67	70	<20	<20	17	2.93	1.33	0.27	0.03	0.49	17	16	5	20	8	<5	<10	<0.01	9
411	10623	<5	0.261	3.38	269	<10	106	74	41	<20	<20	12	2.13	1.14	1.03	0.12	0.16	78	6	4	13	6	<5	<10	0.08	13

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
412	10539	Fish Ck		pan	4 pan comp, mod mag	309			<0.2	19	16	63	6	35	23	0.5	<5	33
412	10540	Fish Ck		sed		<5			<0.2	24	7	87	<1	36	16	<0.2	<5	8
413	10541	Atla Ck		sed		<5			<0.2	23	4	44	3	15	10	<0.2	<5	<5
413	10542	Atla Ck		pan	mod mag	<5			<0.2	9	9	34	6	18	16	0.3	<5	10
414	10606	Raven Ck		sed		<5			<0.2	27	3	47	1	31	12	<0.2	<5	9
414	10607	Raven Ck		pan	mod mag	22			<0.2	9	8	44	5	27	17	0.3	<5	10
415	10505	Raven Ck	flt	sel	meta gwy	<5			<0.2	40	4	64	1	18	21	0.5	<5	217
415	10626	Raven Ck	rub	sel	brecciated hfls, near intr contact	<5			<0.2	52	4	36	2	21	18	<0.2	<5	21
415	10627	Raven Ck	flt	sel	banded hfls w/ lim, near intr contact	<5			<0.2	50	5	18	6	16	9	<0.2	<5	16
415	10628	Raven Ck	rub	rand	hfls w/ lim, near intr contact	<5			<0.2	152	<2	41	3	28	28	0.3	<5	146
415	10629	Raven Ck	rub	sel	hfls w/ lim, near intr contact	<5			<0.2	15	3	24	2	25	15	<0.2	<5	56
416	10588	Indian River		plac	1 fine and 20 v fine Au flakes	24.32 ppm			<0.2	48	13	48	225	27	17	<0.2	<5	24
417	11005	Black Ck	rub	sel	hypabyssal dike w/ 2% cpy, qz, feld	16			0.8	888	3	15	9	3	3	<0.2	<5	9
418	11006	Black Ck	flt	sel	hfls w/ cpy, lim, MnO	9			0.5	1336	<2	38	5	11	7	0.3	<5	111
419	10605	Black Ck	flt	sel	hfls w/ qz veins, < 5% py	12			3.3	2121	8	31	10	7	10	<0.2	473	20
420	10994	Black Ck	flt	sel	brecciated hfls w/ 1% cpy, qz matrix	31			2.3	1442	<2	43	3	12	10	<0.2	<5	5
420	10995	Black Ck	rub	sel	brecciated hfls w/ 1% cpy, qz matrix	16			2.4	1661	<2	46	2	14	8	<0.2	<5	6
421	11023	Black Ck	flt	sel	blk hfls w/ cpy	2			<0.2	98	7	39	4	9	9	0.3	<5	71
422	11024	Black Ck	flt	sel	hfls w/ diss cpy (?)	2			<0.2	89	<2	32	1	11	14	<0.2	<5	15
423	10959	Black Ck	flt	sel	hfls mdst w/ 2% po	4			0.2	363	<2	51	3	33	37	2.0	<5	595
423	10960	Black Ck		sed		11			<0.2	38	6	76	2	23	14	<0.2	<5	62
424	10961	Black Ck	flt	sel	hfls mdst w/ diss and stringer py/po	8			0.3	189	<2	43	2	12	13	<0.2	<5	60
425	10962	Black Ck	rub	sel	hfls mdst, brecciated gwy w/ 3% py	<1			<0.2	196	<2	16	2	11	14	<0.2	<5	8
425	10963	Black Ck	rub	sel	latitic dike w/ po (?), bio, qz, feld	<1			<0.2	10	4	23	3	14	2	<0.2	<5	6
426	10602	Black Ck		pan	1 fine Au flake, mod mag	36			<0.2	142	5	35	7	16	21	<0.2	<5	98
426	10603	Black Ck		sed		<5			<0.2	210	<2	72	9	22	25	0.2	<5	89
426	10604	Black Ck	flt	grab	coarse arkosic ss w/ 10% py	<5			<0.2	161	9	39	3	11	18	<0.2	<5	15
427	10958	Black Ck	flt	sel	diorite (?) w/ 5% po, lim	5			<0.2	343	<2	39	2	13	25	<0.2	<5	42
428	10957	Black Ck	tail	sel	gray hfls w/ 1% po, tr cpy	2			<0.2	92	<2	32	2	7	8	<0.2	<5	27
429	11003	Black Ck	rub	rep	gwy w/ diss cpy, lim, MnO	10			<0.2	242	4	48	4	14	21	<0.2	<5	11
429	11004	Black Ck	flt	sel	hfls w/ 5% cpy, lim, MnO	4			<0.2	129	<2	29	3	29	17	<0.2	<5	5
430	10981	Black Ck		soil	eastern soil traverse	6			<0.2	132	6	55	2	18	8	<0.2	<5	14
431	10972	Black Ck		soil	eastern soil traverse	323			<0.2	79	7	72	2	24	10	<0.2	<5	49
431	10973	Black Ck		soil	eastern soil traverse	41			<0.2	111	4	63	2	21	13	<0.2	<5	27
431	10974	Black Ck		soil	eastern soil traverse	38			<0.2	104	4	61	2	17	12	<0.2	<5	26
431	10975	Black Ck		soil	eastern soil traverse	15			<0.2	77	4	55	3	15	8	<0.2	<5	22

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
412	10539	<5	0.033	>10.00	1198	<10	102	261	410	<20	36	1201	1.51	0.49	1.03	0.09	0.15	89	40	24	12	39	23	<10	0.23	19
412	10540	<5	0.042	3.63	469	<10	169	40	64	<20	<20	22	2.36	0.82	0.57	0.02	0.10	64	9	<2	28	4	5	<10	0.08	2
413	10541	<5	0.032	2.51	309	<10	283	20	59	<20	<20	22	2.00	0.55	0.58	0.04	0.12	96	5	<2	15	4	<5	<10	0.09	<1
413	10542	<5	0.018	>10.00	390	<10	87	201	346	<20	81	512	0.57	0.19	0.47	0.05	0.07	42	11	15	4	32	8	<10	0.10	8
414	10606	<5	0.027	2.81	382	<10	149	44	75	<20	<20	25	1.93	0.72	0.48	0.02	0.22	58	6	<2	14	4	<5	<10	0.10	1
414	10607	<5	0.010	>10.00	503	<10	57	185	323	<20	33	286	0.71	0.32	0.48	0.05	0.14	31	15	14	6	31	6	<10	0.15	9
415	10505	<5	<0.010	5.08	668	<10	468	65	123	<20	<20	15	2.78	1.51	0.53	0.20	1.74	25	11	7	23	14	13	<10	0.41	10
415	10626	<5	<0.010	3.67	403	<10	243	74	129	<20	<20	15	2.66	1.01	0.82	0.26	1.10	62	15	7	15	14	11	<10	0.31	7
415	10627	<5	<0.010	1.93	321	<10	78	125	54	<20	<20	15	0.95	0.49	0.60	0.11	0.22	24	11	2	7	6	7	<10	0.12	20
415	10628	<5	<0.010	5.58	569	<10	326	81	146	<20	<20	12	3.03	1.27	0.58	0.26	1.52	41	10	8	18	16	14	<10	0.34	6
415	10629	<5	<0.010	2.29	350	<10	76	101	76	<20	<20	16	1.74	0.55	1.21	0.26	0.49	37	10	4	7	9	<5	<10	0.26	6
416	10588	<5	0.053	>10.00	655	<10	95	250	447	<20	1127	665	0.89	0.35	0.87	0.14	0.18	65	20	<2	6	31	11	<10	0.18	6
417	11005	<5	<0.010	1.49	152	<10	56	82	28	<20	<20	50	0.77	0.27	0.46	0.10	0.21	21	7	2	5	1	<5	<10	0.12	10
418	11006	<5	<0.010	5.54	597	<10	322	105	204	<20	<20	6	2.62	1.71	0.14	0.08	2.07	17	4	5	20	<1	19	<10	0.39	<1
419	10605	7	0.015	3.88	207	45	124	102	66	<20	<20	10	1.87	0.79	0.29	0.06	0.64	16	6	5	28	8	6	<10	0.13	5
420	10994	<5	0.014	3.75	435	<10	242	138	98	<20	<20	11	1.85	1.18	0.41	0.14	1.21	44	11	4	14	<1	10	<10	0.30	4
420	10995	<5	0.012	3.40	423	<10	219	172	96	<20	<20	12	1.78	1.05	0.26	0.12	1.16	41	9	4	11	<1	10	<10	0.26	15
421	11023	<5	0.017	2.22	559	<10	64	108	38	<20	<20	45	1.87	0.41	1.36	0.31	0.34	101	21	4	9	1	<5	<10	0.17	62
422	11024	<5	<0.010	3.19	465	<10	138	92	75	<20	<20	15	3.70	0.68	2.20	0.54	0.72	251	16	8	16	<1	7	<10	0.28	3
423	10959	<5	<0.010	7.71	691	<10	70	101	161	<20	<20	5	4.05	1.71	0.94	0.38	2.17	136	5	6	46	<1	17	<10	0.33	<1
423	10960	<5	0.053	3.56	617	<10	213	29	72	<20	<20	14	3.11	0.83	0.35	0.02	0.29	84	7	5	24	2	5	<10	0.10	<1
424	10961	<5	<0.010	6.83	521	<10	46	107	96	<20	40	7	2.34	0.74	1.43	0.32	0.51	89	9	3	10	<1	7	<10	0.23	<1
425	10962	<5	0.011	3.08	245	<10	62	91	43	<20	<20	13	2.10	0.34	1.72	0.40	0.21	124	15	4	5	<1	<5	<10	0.23	6
425	10963	<5	0.011	2.51	246	<10	308	73	56	<20	<20	19	1.63	0.84	1.05	0.23	0.52	233	5	3	16	2	<5	<10	0.16	14
426	10602	<5	0.033	9.36	559	<10	125	65	157	<20	<20	48	2.12	0.75	0.31	0.04	0.65	26	12	5	23	<1	9	<10	0.18	17
426	10603	<5	0.044	5.46	621	<10	181	38	125	<20	<20	28	4.37	1.19	0.44	0.03	0.82	51	14	<2	29	7	13	<10	0.25	7
426	10604	<5	<0.010	3.83	299	<10	86	50	60	<20	<20	21	1.64	0.97	0.11	0.10	0.88	8	13	5	17	7	8	<10	0.22	32
427	10958	<5	<0.010	3.95	728	<10	60	66	76	<20	<20	16	1.12	0.79	1.73	0.18	0.29	27	17	<2	5	<1	7	<10	0.28	<1
428	10957	<5	0.012	4.43	411	<10	240	80	88	<20	<20	12	2.85	1.41	0.55	0.13	1.68	56	7	5	45	<1	7	<10	0.26	1
429	11003	<5	0.013	4.18	322	<10	79	73	88	<20	<20	19	1.43	0.79	0.94	0.17	0.61	31	18	3	10	<1	<5	<10	0.35	3
429	11004	<5	<0.010	3.58	232	<10	51	120	111	<20	<20	9	1.40	0.69	0.70	0.16	0.62	18	10	3	5	<1	<5	<10	0.27	2
430	10981	<5	0.088	2.63	207	<10	197	25	65	<20	<20	13	1.91	0.64	0.17	0.02	0.17	30	4	3	12	2	<5	<10	0.11	<1
431	10972	<5	0.037	3.59	326	<10	183	31	88	<20	<20	17	2.48	0.80	0.26	0.02	0.25	33	6	4	17	2	5	<10	0.13	<1
431	10973	<5	0.034	3.40	604	<10	273	28	99	<20	<20	18	2.56	1.00	0.57	0.02	0.33	82	6	5	16	3	6	<10	0.17	<1
431	10974	<5	0.032	3.48	543	<10	242	28	101	<20	<20	16	2.45	0.93	0.34	0.02	0.19	58	5	6	14	2	5	<10	0.16	<1
431	10975	<5	0.039	2.89	432	<10	187	25	89	<20	<20	12	1.97	0.68	0.28	0.02	0.20	45	4	6	11	2	<5	<10	0.15	<1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
431	10976	Black Ck		soil	eastern soil traverse	8			<0.2	32	4	73	1	7	2	<0.2	<5	<5
431	10977	Black Ck		soil	eastern soil traverse	10			0.3	34	4	42	2	17	3	0.3	<5	6
431	10978	Black Ck		soil	eastern soil traverse	7			<0.2	47	5	47	2	13	4	<0.2	<5	10
431	10979	Black Ck		soil	eastern soil traverse	8			0.2	41	7	54	3	26	6	<0.2	<5	16
431	10980	Black Ck		soil	eastern soil traverse	7			<0.2	25	5	25	1	10	2	<0.2	<5	8
432	11002	Black Ck	flt	sel	gwy w/ diss cpy, lim, MnO	611			6.4	3912	7	84	3	20	42	0.5	<5	50
433	11001	Black Ck	rub	sel	hfls w/ 1% diss cpy, lim, MnO	1			<0.2	164	14	45	<1	16	16	0.2	<5	10
434	10530	Black Ck	rub	grab	hfls w/ po, py, lim	6			<0.2	277	6	46	3	13	18	<0.2	<5	7
434	10531	Black Ck	flt	sel	hfls w/ < 5% po, py, lim	9			<0.2	50	3	40	2	11	43	<0.2	<5	20
434	10532	Black Ck	otc	rand	hfls w/ < 2% po, py, lim	<5			<0.2	61	3	83	1	22	21	0.2	<5	6
435	10501	Black Ck	flt	grab	arkosic ss w/ <1% sulfides	<5			<0.2	21	6	53	2	18	15	<0.2	<5	9
436	10502	Black Ck	flt	grab	coarse ss w/ py, po	<5			<0.2	60	9	53	3	11	16	<0.2	<5	6
437	10503	Black Ck	flt	sel	brecciated hfls w/ py, po	<5			<0.2	62	6	60	<1	18	18	0.2	<5	9
438	10533	Black Ck	flt	grab	hfls w/ 2% po, py, gypsum	<5			<0.2	33	3	51	1	18	22	0.4	<5	110
438	10534	Black Ck	flt	sel	hfls w/ < 3% po, py, lim	<5			<0.2	57	3	48	1	18	21	<0.2	<5	23
439	10986	Black Ck		soil	headlands soil sample	10			<0.2	141	9	76	3	21	13	0.3	<5	58
440	10985	Black Ck		soil	headlands soil sample	5			<0.2	62	7	54	3	12	6	<0.2	<5	33
441	10600	Black Ck		sed		<5			<0.2	53	7	60	2	17	16	<0.2	<5	42
441	10601	Black Ck		pan		6			<0.2	26	9	32	3	20	12	<0.2	<5	19
442	10591	Black Ck	flt	grab	hfls near intr contact w/ py, cpy	<5			<0.2	406	3	55	1	14	26	1.8	<5	1198
442	10592	Black Ck	otc	sel	hfls w/ 1-2% py, po	<5			<0.2	97	7	104	3	15	10	0.2	<5	10
443	11022	Black Ck		pan	from colluvium, abu fine mag	1014	<5	2	<0.2	38	5	52	7	29	16	<0.2	112	46
444	10529	Black Ck	otc	sel	fine grained monz intr	<5			<0.2	39	9	44	2	16	12	0.2	<5	6
444	10589	Black Ck		plac	abu coarse Au, sch & zircon	0.835 oz/cyd			0.4	127	12	63	16	38	33	3.8	100	813
444	10590	Black Ck		plac	abu fine Au, sch & zircon	0.061 oz/cyd			7.0	65	10	64	17	35	23	0.4	139	249
444	10638	Black Ck		plac	abu fine Au, sch & zircon	0.230 oz/cyd			15.6	35	82	70	37	63	30	<0.2	489	174
444	10639	Black Ck	flt	sel	qz veinlet in hfls (?) w/ 10% py, cpy	21			3.3	1485	5	49	3	13	12	0.4	<5	<5
445	10996	Black Ck	flt	sel	gwy w/ <1% diss py	6			<0.2	157	<2	40	1	5	9	<0.2	<5	5
446	10993	Black Ck	flt	sel	dark gry hfls w/ 1-2% diss py	<1			<0.2	72	<2	29	2	13	9	<0.2	<5	9
447	10982	Black Ck		soil	western soil traverse	7			<0.2	35	7	70	1	22	11	0.3	<5	85
447	10983	Black Ck		soil	western soil traverse	9			0.2	13	6	59	1	18	5	<0.2	<5	31
447	10984	Black Ck		soil	western soil traverse	9			0.2	9	3	32	<1	6	2	<0.2	<5	10
448	10598	Black Ck		pan		6			<0.2	49	15	95	1	25	18	0.8	<5	362
448	10599	Black Ck		sed		<5			<0.2	49	10	87	1	25	21	0.4	<5	149
448	11027	Black Ck	rub	sel	hfls w/ 1% diss cpy	4			<0.2	37	<2	56	1	18	17	0.8	<5	254
449	11026	Black Ck	flt	sel	qz-hfls breccia w/ no sulfides	<1			<0.2	24	2	38	1	16	12	<0.2	<5	59

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
431	10976	<5	0.047	0.92	219	<10	85	11	17	<20	<20	5	0.63	0.14	0.16	0.01	0.09	19	2	<2	2	<1	<5	<10	0.05	<1
431	10977	<5	0.073	1.41	100	<10	199	15	29	<20	<20	8	1.18	0.20	0.23	0.01	0.08	39	3	3	4	<1	<5	<10	0.05	<1
431	10978	<5	0.050	1.93	104	<10	124	16	46	<20	<20	12	1.40	0.26	0.19	0.01	0.08	29	3	3	5	2	<5	<10	0.08	<1
431	10979	<5	0.085	2.81	253	<10	185	26	74	<20	<20	12	1.90	0.60	0.15	0.01	0.14	30	3	4	12	2	<5	<10	0.09	<1
431	10980	<5	0.055	1.16	58	<10	113	16	29	<20	<20	9	1.17	0.17	0.14	<0.01	0.07	22	3	3	4	1	<5	<10	0.07	<1
432	11002	<5	0.022	6.11	639	<10	31	52	82	<20	<20	27	1.12	0.55	1.58	0.17	0.10	43	12	<2	8	<1	5	<10	0.25	9
433	11001	<5	<0.010	2.90	312	<10	86	61	47	<20	<20	11	0.94	0.27	0.87	0.17	0.21	208	22	<2	5	1	<5	<10	0.25	10
434	10530	<5	0.013	5.29	596	<10	30	48	83	<20	<20	11	3.46	0.90	1.45	0.36	0.98	522	6	10	27	10	6	<10	0.18	13
434	10531	<5	0.011	5.71	476	<10	28	38	82	<20	<20	12	3.15	1.17	1.50	0.38	0.81	209	6	10	34	11	<5	<10	0.23	12
434	10532	<5	<0.010	5.37	1002	<10	70	75	106	<20	<20	11	3.61	1.51	1.30	0.42	1.43	141	10	9	50	13	10	<10	0.29	15
435	10501	<5	<0.010	3.62	505	<10	157	48	68	<20	<20	14	3.70	0.94	1.84	0.46	0.86	144	13	9	24	10	5	<10	0.28	9
436	10502	<5	0.011	4.01	396	<10	76	47	71	<20	<20	14	3.99	0.78	1.99	0.50	0.82	307	14	10	17	10	6	<10	0.28	12
437	10503	<5	<0.010	4.61	669	<10	108	49	90	<20	<20	10	2.42	1.06	0.94	0.23	0.92	99	12	8	21	11	8	<10	0.32	8
438	10533	<5	<0.010	4.82	392	<10	218	91	132	<20	<20	9	4.28	1.37	1.35	0.44	1.55	68	8	10	31	15	16	<10	0.29	14
438	10534	<5	<0.010	5.07	456	<10	124	65	109	<20	<20	9	3.66	1.38	0.99	0.40	1.49	74	8	9	39	13	14	<10	0.28	27
439	10986	<5	0.060	4.46	414	<10	117	29	79	<20	<20	19	3.19	0.67	0.17	0.02	0.18	34	7	5	26	3	<5	<10	0.11	3
440	10985	<5	0.077	4.38	307	<10	88	30	110	<20	<20	14	2.73	0.64	0.07	0.02	0.30	22	5	6	15	5	6	<10	0.17	4
441	10600	<5	0.059	3.06	501	<10	146	24	63	<20	<20	15	2.42	0.50	0.26	0.02	0.17	58	6	<2	13	4	<5	<10	0.09	2
441	10601	<5	0.013	7.26	286	<10	63	172	175	<20	<20	75	0.84	0.25	0.39	0.06	0.11	40	7	8	5	18	<5	<10	0.10	5
442	10591	<5	<0.010	4.58	338	<10	81	46	112	<20	<20	10	2.53	1.43	0.67	0.23	1.30	45	7	7	25	13	12	<10	0.28	5
442	10592	<5	0.010	3.40	673	<10	353	71	36	<20	<20	32	4.53	0.92	1.71	0.64	1.13	216	12	3	18	7	7	<10	0.19	24
443	11022	<5	0.016	>10.00	523	64	86	276	332	<20	79	117	0.99	0.41	0.60	0.08	0.22	43	9	<2	9	4	<5	<10	0.12	1
444	10529	<5	<0.010	2.34	313	<10	340	48	55	<20	<20	27	2.68	0.83	1.08	0.34	0.71	195	4	4	13	7	<5	<10	0.18	7
444	10589	<5	0.966	>10.00	705	<10	107	297	562	<20	445	100	0.95	0.33	0.53	0.07	0.25	42	9	<2	9	32	<5	<10	0.09	2
444	10590	<5	0.219	>10.00	784	63	117	231	526	<20	557	130	1.16	0.46	0.64	0.10	0.34	50	10	<2	11	30	6	<10	0.13	4
444	10638	<5	0.107	>10.00	1063	209	30	425	1188	30	>2000	190	0.27	0.12	0.80	0.03	0.08	24	15	<2	3	67	5	<10	0.12	1
444	10639	<5	<0.010	3.32	404	<10	323	59	65	<20	<20	28	2.72	0.99	0.91	0.34	0.94	158	5	7	9	3	<5	<10	0.22	5
445	10996	<5	<0.010	3.23	713	<10	107	38	84	<20	<20	17	1.03	0.78	1.50	0.16	0.39	17	13	3	11	<1	7	<10	0.25	<1
446	10993	<5	<0.010	4.33	459	<10	224	99	143	<20	<20	4	3.62	1.44	0.97	0.39	1.77	137	7	7	17	<1	16	<10	0.29	<1
447	10982	<5	0.051	3.26	351	<10	179	29	70	<20	<20	14	2.87	0.71	0.27	0.02	0.20	53	7	5	20	2	<5	<10	0.10	<1
447	10983	<5	0.107	1.73	204	<10	106	23	39	<20	<20	7	1.43	0.26	0.09	0.01	0.12	17	3	3	8	2	<5	<10	0.06	<1
447	10984	<5	0.065	0.45	48	<10	68	5	12	<20	<20	2	0.36	0.06	0.22	0.01	0.06	35	1	<2	<1	<1	<5	<10	0.03	<1
448	10598	<5	0.033	4.95	689	<10	196	100	92	<20	<20	25	2.60	0.88	0.44	0.09	0.71	45	10	8	30	10	8	<10	0.19	14
448	10599	<5	0.069	3.93	708	<10	186	32	74	<20	<20	17	3.58	0.74	0.38	0.03	0.31	81	9	<2	21	4	6	<10	0.11	2
448	11027	<5	<0.010	4.18	621	<10	419	105	153	<20	<20	9	2.68	1.33	0.72	0.29	1.44	76	9	6	28	<1	13	<10	0.29	9
449	11026	5	<0.010	2.10	392	<10	182	100	65	<20	<20	13	3.67	0.56	2.55	0.33	0.61	266	9	8	11	<1	5	<10	0.22	5

Appendix B - Analytical Results

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
450	10965	Black Ck		sed		13			<0.2	22	6	68	1	20	12	0.3	<5	86
450	10966	Black Ck		pan	tr mag, no visible Au	29	6	<1	<0.2	42	3	81	2	25	17	0.5	<5	112
451	10964	Black Ck	rub	ran	aplite w/ green mineral (ch ?)	42			<0.2	8	7	19	<1	5	10	1.7	<5	537
451	10992	Black Ck	flt	ran	felsic dike w/ tr po (?), lim	<1			<0.2	27	3	48	2	16	9	<0.2	<5	12
452	10967	Black Ck	flt	sel	brn hfls w/ xcut qz, diss po	6			0.2	120	<2	37	<1	12	8	0.7	<5	223
452	10968	Black Ck	rub	sel	blk hfls w/ diss po (?)	<1			<0.2	38	<2	46	2	19	17	<0.2	<5	40
452	10990	Black Ck	rub	ran	porphyritic andesite	9			<0.2	7	3	38	2	11	6	0.7	<5	169
452	10991	Black Ck	flt	sel	qz-feldspar breccia	3			<0.2	48	8	34	3	6	7	0.6	<5	151
453	10597	Black Ck	flt	grab	hfls breccia w/ <1% py, lim	69			<0.2	76	10	43	4	14	16	3.5	<5	2676
454	10971	Black Ck	flt	ran	dark gray hfls w/ 1% po, lim	4			<0.2	77	4	98	8	27	25	4.4	<5	1311
455	11025	Black Ck	flt	sel	gwy w/ diss cpy	<1			<0.2	14	2	34	3	20	16	<0.2	<5	6
456	10997	Black Ck	flt	sel	dark gray hfls w/ 1% diss po	<1			<0.2	38	<2	71	1	14	11	<0.2	<5	5
456	10998	Black Ck	flt	sel	hfls w/ 1% po, xcut qz, lim	1			<0.2	40	2	84	2	42	16	<0.2	<5	<5
457	10595	Black Ck	flt	grab	felsic volc? w/ diss py, fine hbl	<5			<0.2	5	9	17	<1	2	1	0.4	<5	181
457	10596	Black Ck	flt	grab	porphyritic andesite w/ po	57			<0.2	88	5	67	2	17	23	1.0	<5	564
458	10594	Black Ck	flt	grab	dioritic intr w/ 1% po, lim	<5			<0.2	40	11	84	2	11	13	0.3	<5	18
459	11021	Black Ck	flt	sel	hfls w/ tr po, py	2			<0.2	48	3	48	2	12	14	<0.2	<5	24
460	10593	Black Ck	rub	grab	hfls w/ diss and stringer po	<5			<0.2	81	10	81	5	19	17	0.4	<5	82
461	10953	Black Ck		sed		12			<0.2	39	12	86	<1	20	15	0.4	<5	97
461	10954	Black Ck		pan	no mag	14	<5	<1	<0.2	34	7	120	2	19	14	0.5	<5	69
462	10952	Black Ck	flt	sel	black hfls w/ py	1			<0.2	152	8	62	2	29	18	0.4	<5	108
463	10950	Black Ck		sed		12			<0.2	40	15	85	<1	21	13	0.4	<5	80
463	10951	Black Ck		pan	minor mag, possible sulfides	8	<5	2	<0.2	37	9	90	2	20	13	0.5	<5	92
464	10543	Indian River	flt	grab	andesite w/ mag, qz, lim	<5			<0.2	76	5	64	<1	19	22	0.2	<5	8
464	10630	Indian River	flt	sel	vuggy andesite w/ qz veinlets, lim	<5			<0.2	74	3	55	2	16	20	<0.2	<5	9
465	10506	Indian River	flt	sel	andesite	<5			<0.2	50	<2	63	<1	16	21	0.2	<5	<5
465	10544	Indian River	flt	grab	andesite w/ mag, qz, ep, lim	<5			<0.2	61	4	58	1	23	23	0.3	<5	<5
465	10545	Indian River	flt	grab	andesite w/ lim, ep (?)	<5			<0.2	30	7	58	1	28	20	0.4	<5	<5
465	10631	Indian River	flt	sel	andesite/ andesite breccia w/ lim	<5			<0.2	16	3	34	1	18	14	0.2	<5	7
466	10507	Indian River	flt	sel	andesite w/ lim, MnO	<5			<0.2	33	3	45	1	12	17	<0.2	<5	6
466	10546	Indian River	flt	grab	andesite w/ qz veinlets, ep, lim	<5			<0.2	38	6	38	1	16	19	0.2	<5	5
466	10632	Indian River	flt	sel	andesite brecc w/ lim	<5			<0.2	30	7	48	1	19	18	<0.2	<5	8
467	10947	Indian River	flt	sel	green andesite w/ qz vein	<1			<0.2	58	3	26	2	8	6	<0.2	<5	<5
468	10633	Indian River	flt	sel	felsic intr w/ py, gray metallic (?)	8290			11.5	794	1771	998	2	3	3	5.8	<5	27
468	10634	Indian River		pan	no visible Au, no mag	<5			<0.2	30	18	66	<1	17	18	0.3	<5	9
468	10635	Indian River		sed		<5			<0.2	33	11	80	<1	20	14	0.3	<5	7

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
450	10965	<5	0.048	2.96	458	<10	146	26	60	<20	<20	17	2.35	0.65	0.32	0.02	0.23	61	7	4	20	1	<5	<10	0.09	<1
450	10966	<5	0.010	4.64	730	<10	289	108	111	<20	<20	20	3.20	1.25	0.67	0.08	1.07	79	11	6	32	2	11	<10	0.23	5
451	10964	<5	<0.010	0.65	117	<10	80	73	14	<20	<20	44	1.23	0.14	0.77	0.25	0.13	47	20	4	5	2	<5	<10	0.14	49
451	10992	<5	<0.010	2.86	781	<10	178	82	43	<20	<20	12	2.13	1.06	0.64	0.12	0.07	113	4	4	14	<1	<5	<10	0.10	15
452	10967	<5	<0.010	3.09	413	<10	293	79	104	<20	<20	14	2.97	1.08	1.27	0.42	1.15	149	8	8	27	<1	<5	<10	0.24	5
452	10968	<5	<0.010	3.61	455	<10	409	97	122	<20	<20	6	3.19	1.11	1.27	0.45	1.17	176	9	6	27	1	8	<10	0.23	<1
452	10990	<5	0.023	2.26	464	<10	178	52	60	<20	<20	44	1.84	0.69	1.07	0.19	0.46	125	9	5	21	<1	<5	<10	0.20	8
452	10991	<5	<0.010	2.35	503	<10	64	52	56	<20	<20	19	1.39	0.27	1.67	0.26	0.16	54	13	5	5	<1	8	<10	0.17	8
453	10597	<5	<0.010	3.75	366	<10	192	72	102	<20	<20	18	3.08	0.77	1.13	0.37	0.67	110	9	10	25	12	10	<10	0.17	24
454	10971	<5	<0.010	6.39	553	<10	120	80	227	<20	<20	7	3.53	1.64	0.78	0.35	1.51	126	8	7	37	1	15	<10	0.19	7
455	11025	<5	0.011	2.57	510	<10	180	73	49	<20	<20	11	2.11	0.92	1.14	0.23	0.42	190	4	4	15	<1	<5	<10	0.16	16
456	10997	<5	<0.010	3.61	1104	<10	209	128	117	<20	<20	13	3.16	1.45	0.88	0.38	1.34	91	8	7	45	<1	13	<10	0.23	5
456	10998	<5	<0.010	4.14	986	<10	132	139	121	<20	<20	10	3.23	2.32	0.92	0.35	1.66	77	9	6	45	<1	9	<10	0.26	11
457	10595	<5	<0.010	0.40	102	<10	93	51	2	<20	<20	11	0.40	0.09	0.08	0.09	0.09	8	5	2	4	2	<5	<10	0.02	25
457	10596	<5	<0.010	4.92	617	<10	384	56	77	<20	<20	42	3.55	1.18	1.26	0.42	1.64	175	7	11	49	11	7	<10	0.31	17
458	10594	<5	<0.010	4.73	602	<10	222	69	117	<20	<20	8	3.87	1.41	1.26	0.44	1.23	170	8	9	28	14	14	<10	0.23	6
459	11021	<5	<0.010	3.49	453	<10	141	108	105	<20	<20	9	1.72	1.15	0.66	0.21	0.83	56	9	4	26	1	10	<10	0.29	2
460	10593	6	<0.010	4.32	500	<10	318	81	173	<20	<20	7	3.25	1.29	0.78	0.33	1.32	100	6	8	44	19	16	<10	0.22	6
461	10953	<5	0.035	2.81	534	<10	185	23	62	<20	<20	18	2.36	0.68	0.39	0.02	0.29	75	8	4	18	<1	<5	<10	0.10	<1
461	10954	<5	0.010	3.38	861	<10	276	142	74	<20	<20	18	2.06	0.85	0.45	0.07	0.71	35	11	5	23	1	6	<10	0.20	4
462	10952	<5	<0.010	3.90	562	<10	255	89	147	<20	<20	24	2.52	1.38	0.95	0.23	1.19	129	6	4	35	<1	6	<10	0.24	5
463	10950	<5	0.037	2.89	459	<10	176	26	65	<20	<20	21	2.32	0.70	0.40	0.02	0.32	73	9	4	18	2	<5	<10	0.11	<1
463	10951	<5	0.016	3.50	763	<10	203	190	84	<20	<20	31	1.81	0.79	0.44	0.07	0.51	38	10	4	18	<1	6	<10	0.17	<1
464	10543	<5	<0.010	4.22	590	<10	158	48	106	<20	<20	14	2.44	1.92	1.11	0.06	0.61	75	7	4	10	12	5	<10	0.23	16
464	10630	<5	<0.010	4.13	786	<10	214	51	116	<20	<20	14	2.88	1.72	3.33	0.15	0.78	96	8	4	8	13	<5	<10	0.24	19
465	10506	<5	<0.010	3.92	632	<10	109	35	93	<20	<20	9	2.29	1.93	0.79	0.04	0.29	33	6	3	11	10	5	<10	0.20	13
465	10544	<5	<0.010	3.14	422	<10	23	62	82	<20	<20	16	3.17	2.37	1.89	0.03	0.06	113	5	4	18	11	6	<10	0.23	15
465	10545	<5	<0.010	3.47	732	<10	81	62	89	<20	<20	21	2.54	1.70	2.28	0.03	0.09	102	8	5	10	11	7	<10	0.20	17
465	10631	<5	0.012	2.24	631	<10	47	87	71	<20	<20	17	2.37	0.97	2.75	0.03	0.02	103	5	6	5	9	5	<10	0.18	25
466	10507	<5	0.011	3.64	546	<10	83	35	100	<20	<20	20	1.78	1.04	1.43	0.08	0.07	108	8	5	6	11	<5	<10	0.22	19
466	10546	<5	<0.010	2.34	546	<10	38	65	84	<20	<20	11	2.56	1.89	2.36	0.02	0.02	203	5	<2	12	11	<5	<10	0.20	10
466	10632	<5	0.010	3.17	565	<10	37	55	82	<20	<20	36	2.68	1.28	1.42	0.05	0.04	99	8	5	9	9	6	<10	0.27	31
467	10947	<5	<0.010	1.28	364	<10	35	181	48	<20	<20	11	1.30	0.48	1.94	0.03	0.03	67	4	4	3	1	<5	<10	0.11	10
468	10633	<5	2.509	2.73	49	<10	161	41	15	<20	<20	57	0.94	0.11	0.06	0.01	0.24	27	5	7	1	2	<5	<10	<0.01	6
468	10634	<5	0.024	4.81	571	<10	106	68	105	<20	<20	26	2.39	0.85	1.07	0.03	0.11	100	7	6	13	11	6	<10	0.13	9
468	10635	<5	0.050	3.17	496	<10	223	26	66	<20	<20	19	2.98	0.79	0.71	0.02	0.10	55	8	<2	17	4	<5	<10	0.06	1

Map No.	Field No.	Location	Sample Site	Sample Type	Sample Description	Au ppb	Pt ppb	Pd ppb	Ag ppm	Cu ppm	Pb ppm	Zn ppm	Mo ppm	Ni ppm	Co ppm	Cd ppm	Bi ppm	As ppm
468	10948	Indian River	flt	sel	andesite w/ lim	16			0.2	36	508	396	1	3	6	0.5	<5	27
468	10949	Indian River	flt	sel	vuggy, lim rock	13			0.5	46	737	218	<1	3	<1	0.4	<5	6
469	10508	Indian River	flt	sel	vein qz w/ py, lim, box	30			0.8	15	44	10	74	5	2	0.2	<5	<5
469	10509	Indian River		soil	red-brn soil	28			0.4	158	110	232	<1	4	5	0.3	<5	17
469	10510	Indian River	otc	sel	volc agglomerate w/ lim	10			<0.2	281	<2	207	<1	1	5	0.5	<5	<5
469	10511	Indian River	flt	sel	vein qz w/ 5% py, lim, sco (?)	593			21.6	692	221	78	7	8	6	0.7	7	67
470	10608	Utopia Ck	tail	rand	barite/ dolomite w/ < 5% py	1141			2.4	486	40	10	13	15	11	<0.2	<5	58
470	10609	Utopia Ck	tail	sel	barite w/ 2% py, tet (?)	5565			342	750	4846	1108	6	3	2	8.4	<5	344
470	10610	Utopia Ck		sed		14			0.6	26	55	118	1	18	10	0.7	<5	12
470	10611	Utopia Ck		pan		33			<0.2	31	143	194	1	16	25	1.4	<5	20
470	10612	Utopia Ck	flt	sel	gossaneous, fault breccia w/ lim	100			4.4	160	1.95%	599	9	3	4	4.8	<5	529
471	10504	Utopia Ck	flt	sel	andesite w/ ep, qz veinlets	<5			<0.2	12	9	10	1	6	7	0.2	<5	6
471	10535	Utopia Ck	flt	sel	hfls w/ 1% py, lim	<5			<0.2	36	10	57	3	17	14	0.2	<5	8
471	10537	Utopia Ck	flt	sel	andesite w/ po, ep, lim	<5			<0.2	90	4	61	1	32	25	0.2	<5	7
471	10613	Utopia Ck	otc	rand	andesitic breccia w/ tet, mal, ep	9			<0.2	194	43	16	3	7	8	0.3	<5	12
472	10536	Utopia Ck	flt	sel	fine grained andesite w/ 5% po	<5			<0.2	21	16	199	2	4	12	0.9	<5	12
473	10618	Pocahontus Ck		pan	3 pan comp, mod mag	23			<0.2	4	15	47	2	51	24	0.4	<5	18
474	10614	Macaroni Ck	rub	rand	hydro alt rhyolite w/ py pits	<5			<0.2	4	28	4	8	4	<1	<0.2	<5	13
474	10615	Macaroni Ck	trn	sel	hydro alt rhyolite w/ 5% py	36			0.3	32	13	12	5	11	16	<0.2	<5	14
474	10616	Macaroni Ck		soil	red soil	91			1.8	52	166	14	10	3	<1	0.4	<5	291
475	10538	VABM Cone	flt	grab	andesite	<5			<0.2	10	17	57	<1	7	8	0.2	<5	5
475	10617	VABM Cone	flt	grab	andesite w/ minor lim	<5			<0.2	14	11	57	<1	15	8	<0.2	<5	<5
476	10636	Little Indian R	flt	sel	banded tuff at obsidian quarry site	<5			<0.2	4	11	23	2	3	2	<0.2	<5	<5

Map No.	Field No.	Sb ppm	Hg ppm	Fe pct	Mn ppm	Te ppm	Ba ppm	Cr ppm	V ppm	Sn ppm	W ppm	La ppm	Al pct	Mg pct	Ca pct	Na pct	K pct	Sr ppm	Y ppm	Ga ppm	Li ppm	Nb ppm	Sc ppm	Ta ppm	Ti pct	Zr ppm
468	10948	<5	0.089	1.52	514	<10	357	89	15	<20	<20	61	0.87	0.05	0.21	0.02	0.33	16	8	<2	<1	<1	<5	<10	<0.01	4
468	10949	<5	0.106	1.63	684	<10	728	75	13	<20	<20	70	0.95	0.08	0.17	0.02	0.38	25	7	<2	<1	<1	<5	<10	<0.01	4
469	10508	<5	0.012	0.70	21	<10	104	126	4	<20	<20	9	0.23	0.03	<0.01	<0.01	0.09	100	2	<2	<1	<1	<5	<10	<0.01	3
469	10509	<5	0.038	>10.00	144	<10	246	11	42	<20	<20	13	1.40	0.32	0.12	<0.01	0.09	18	6	<2	3	4	<5	<10	0.04	5
469	10510	5	0.012	>10.00	64	<10	86	6	10	<20	<20	<1	0.51	0.18	0.04	<0.01	0.04	6	<1	21	1	<1	<5	<10	0.05	19
469	10511	<5	0.068	3.85	26	<10	16	150	8	<20	<20	2	0.14	0.01	<0.01	0.01	0.07	80	1	2	<1	<1	<5	<10	<0.01	4
470	10608	<5	0.126	6.02	8	<10	37.09%	89	<1	<20	<20	<1	0.02	<0.01	<0.01	<0.01	<0.01	104	<1	4	<1	<1	<5	<10	<0.01	4
470	10609	173	1.631	3.15	20	<10	53.71%	91	31	<20	<20	6	0.37	0.01	0.02	<0.01	0.08	338	1	3	1	3	<5	<10	<0.01	4
470	10610	<5	0.074	3.37	778	<10	839	27	65	<20	<20	21	2.59	0.55	0.69	0.01	0.09	50	15	4	17	3	<5	<10	0.03	<1
470	10611	<5	0.048	7.18	1265	<10	>2000	39	117	<20	<20	27	2.81	1.09	0.83	0.02	0.11	137	9	7	13	13	8	<10	0.13	15
470	10612	<5	0.368	>10.00	44	<10	179	40	134	<20	<20	43	1.36	0.04	0.06	<0.01	0.29	63	6	9	1	12	6	<10	<0.01	5
471	10504	<5	<0.010	1.84	291	<10	9	70	54	<20	<20	18	2.09	0.22	2.76	0.01	<0.01	271	6	6	1	8	6	<10	0.20	18
471	10535	<5	0.011	2.98	422	<10	93	117	42	<20	<20	43	1.11	0.71	0.55	0.12	0.03	64	16	6	3	5	8	<10	0.24	60
471	10537	<5	<0.010	4.66	566	<10	66	64	130	<20	<20	53	2.51	2.05	2.98	0.06	0.05	224	9	8	7	15	7	<10	0.28	16
471	10613	<5	0.016	2.67	300	<10	529	111	80	<20	<20	22	2.86	0.34	3.44	0.02	<0.01	375	9	7	2	10	6	<10	0.23	10
472	10536	<5	0.024	4.49	994	<10	171	46	44	<20	<20	39	1.59	0.91	1.25	0.12	0.07	38	25	10	4	6	12	<10	0.33	20
473	10618	<5	0.070	>10.00	530	<10	29	302	666	<20	<20	168	0.42	0.10	0.98	0.02	0.03	23	18	23	4	61	<5	<10	0.16	17
474	10614	<5	0.015	0.46	6	<10	519	74	7	<20	<20	2	0.76	<0.01	<0.01	<0.01	<0.01	18	<1	<2	2	<1	<5	<10	<0.01	8
474	10615	<5	0.024	6.61	18	<10	7	69	5	<20	<20	1	0.89	<0.01	<0.01	<0.01	0.01	26	<1	5	3	<1	<5	<10	<0.01	12
474	10616	7	0.065	7.10	29	<10	517	15	59	<20	<20	9	1.36	0.05	0.01	<0.01	0.08	28	1	6	1	2	<5	<10	<0.01	9
475	10538	<5	0.011	2.36	554	<10	89	35	24	<20	<20	42	1.72	0.77	0.48	0.03	0.22	12	10	4	26	5	<5	<10	0.17	19
475	10617	<5	0.013	2.81	649	<10	167	43	33	<20	<20	41	1.82	0.85	1.04	0.04	0.24	34	10	4	29	5	<5	<10	0.02	10
476	10636	<5	0.014	0.86	247	<10	10	35	4	<20	<20	19	0.96	0.04	0.02	0.11	0.17	1	22	3	12	6	<5	<10	0.03	36

*Appendix C - Placer Gold Production in the Koyukuk Mining District

Year	Gold (refined oz)	Silver (refined oz)	Producing mines	Comments
1900	5128.2	310.0	13	gold discovered on Hammond River and Gold Creek
1903	13352.7	874.0	13	mining on Mascot Creek
1904	8176.1	580.0	18	
1905	7943.9	567.0	13	deep placers discovered on Nolan Creek
1906	7581.0	411.0	10	rush to Chandalar district takes miners from Koyukuk district
1907	10446.5	490.0	9	
1908	50529.0	693.0	11	
1909	42644.7	1214.0	13	
1910	5542.1	464.0	?	
1911	4578.9	406.0	?	
1912	256.5	1385.0	?	over 400 men in district with most production from Hammond River
1913	5527.5	2770.0	?	300-400 men in district
1914	9846.5	1800.0	?	139 oz gold nugget found on Hammond River
1915	4934.1	1902.0	30	
1916	7085.2	2147.0	35	
1917	1387.5	1700.0	29	most production from Hammond River and Nolan Creek
1918	2613.6	860.0	20	150 men engaged in district
1919	2159.1	760.0	18	gold reported on Birch Creek
1920	2602.9	146.0	25	most production from Myrtle, Nolan, Jay, and Smith Creeks
1921	3383.8	119.0	37	most production from Nolan Creek
1922	3992.5	214.0	36	most production from Nolan Creek
1923	1126.2	?	16	
1924	2082.0	?	27	
1925	1643.5	?	?	Detroit Mining Co. acquires claims on Hammond River
1926	1598.2	?	?	most production from Nolan Creek
1927	2185.7	37.0	14	gold discovered on Bettles River

*Sources: U.S. Geological Survey Bulletins, U.S. Bureau of Mines Mineral Yearbooks, Alaska Division of Geological and Geophysical Survey records, and U.S. Mint records.

*Appendix C - Placer Gold Production in the Koyukuk Mining District

Year	Gold (refined oz)	Silver (refined oz)	Producing mines	Comments
1928	1407.4	3.0	9	
1929	960.7	31.0	20	
1930	2216.4	?	?	low water year
1931	1119.2	?	?	most production from Nolan Creek, Hammond and Wild Rivers
1932	1425.5	?	?	
1933	1411.2	?	20	low water year
1934	1102.5	?	?	gold price increased from $20-$35/oz
1935	1873.8	?	?	most production from Nolan and Archibald Creeks
1936	584.4	?	?	
1937	2948.3	?	50	low water year
1938	1486.7	?	?	
1939	2094.9	?	?	
1940	737.0	271.0	25	most production from Myrtle Creek with mechanical equipment; 23 oz gold nugget found
1941	3851.1	583.0	?	
1942	822.8	?	?	PL208 enacted 10/8/42, six tons Sb ore mined on Smith Creek
1943	361.3	?	8	
1944	18.1	?	?	
1945	971.4	246.0	?	most production by S. Fork Mining Co. from Gold Bench claims
1946	45.3	51.0	?	largest production from Gold Bench on South Fork Koyukuk River
1947	569.0	449.0	16	Gold Bench on South Fork Koyukuk and Myrtle Creek
1948	215.7	215.0	14	Gold Bench on South Fork Koyukuk and Myrtle Creek
1949	834.0	228.0	15	Gold Bench on South Fork Koyukuk and Myrtle Creek
1950	8566.1	346.0	17	Myrtle Creek largest producer followed by Vermont Creek
1951	383.7	27.0	11	South Fork Mining Co. largest producer
1952	820.0	66.0	10	Myrtle and Vermont Creeks largest producers
1953	1683.5	75.0	9	Myrtle Creek largest producer
1954	423.0	31.0	8	Mascot Creek largest producer
1955	496.0	37.0	10	Mascot Creek largest producer
1956	364.0	32.0	3	

*Appendix C - Placer Gold Production in the Koyukuk Mining District

Year	Gold (refined oz)	Silver (refined oz)	Producing mines	Comments
1957	288.0	22.0	3	
1958	144.0	11.0	4	
1959	140.0	9.0	4	
1960	203.0	20.0	3	
1961	386.0	35.0	5	
1962	649.0	64.0	3	
1963	0.0			no data
1964	11817.0			Nolan Creek largest producer
1965	0.0			no data
1966	0.0			no data
1967	0.0			no data
1968	0.0			no data
1969	0.0			no data
1970	0.0			no data
1971	0.0			no data
1972	0.0			no data
1973	0.0			no data
1974	0.0			no data
1975	0.0			no data
1976	212.0	?	?	
1977	300.0	?	?	Mascot Creek
1978	0.0	112.0	2	Nolan and Mascot Creeks
1979	14.3	280.0	5	Nolan, Vermont, Union, and Mascot Creeks
1980	2.9	398.0	4	Nolan and Mascot Creeks
1981	1399.7	880.0	13	Porcupine, Emma, Linda, Archibald, Vermont, Union, Nolan and Mascot Creeks
1982	0.0	390.0	12	Porcupine, Emma, Linda, Archibald, Vermont, Union, Nolan and Mascot Creeks
1983	0.0	700.0	9	Porcupine, Emma, Linda, Archibald, Vermont, Union, Nolan and Mascot Creeks
1984	579.8	1500.0	15	Porcupine, Emma, Linda, Archibald, Vermont, Union, Nolan and Mascot Creeks
1985	0.0	570.0	6	Emma, Linda, Archibald and Nolan Creeks

*Appendix C - Placer Gold Production in the Koyukuk Mining District

Year	Gold (refined oz)	Silver (refined oz)	Producing mines	Comments
1986	0.0	198.0	4	Emma, Linda, Archibald and Nolan Creeks
1987	753.4	367.0	10	Archibald Creek largest producer
1988	11.4	552.0	12	Emma, Linda, Archibald, Smith, Nolan, Union, Mascot and Vermont Creeks
1989	18.1	414.0	13	Emma, Linda, Archibald, Smith, Nolan, Union, Mascot and Vermont Creeks
1990	103.6	385.0	9	Emma, Linda, Archibald, Smith, Nolan, Union, Mascot and Vermont Creeks
1991	209.0	510.0	10	Sheep, Nolan, Mascot, Archibald, Linda and Vermont Creeks
1992	389.5	220.0	5	Myrtle, Nolan, Chapman Creeks and Tramway Bar
1993	285.0	260.0	6	Slate, Linda, Nolan Creeks and Hammond River
1994	8023.7	1340.0	4	Linda, Vermont and Nolan Creeks
1995	4485.0	395.0	4	Myrtle, Davis, Nolan and Linda Creeks
1996	368.7	80.0	3	Davis, Linda and Nolan Creeks
1997	540.0	?	?	Linda Creek, Gold Creek and Hammond River
1998	243.0	?	?	Linda Creek, Gold Creek, Porcupine Creek, Nolan Creek and Hammond River
Total	297558.4	33336.0		

Appendix D - Geophysics Program

The Bureau of Land Management (BLM) through a cooperative agreement with the Alaska Division of Geological & Geophysical Surveys (DGGS) completed an airborne geophysical survey in the northeast portion of the Koyukuk mining district. The BLM selected the area to be flown and provided the funding for a contractor to perform the work while the DGGS oversaw the processes of bid solicitation and selection as well as execution of the field survey.

The area contains polymetallic vein, copper skarn, porphyry copper, and volcanogenic massive sulfide occurrences. The survey may reveal concealed deposits of these types or significant associated geologic structures. The geophysical methods chosen included induced electromagnetic conductivity (EM) at multiple frequencies as well as the total magnetic field. Flight lines were flown at a line spacing of ¼ mile with the sensors 200 feet above ground. An area of 533 square miles was covered with approximately 2200 line miles flown. On-Line Exploration Service, Inc., was the primary contractor. Subcontractors on the project were SIAL Geosciences, Inc., and Evergreen Helicopters.

The field survey was completed in October of 1997. Processing of the data and the preparation of maps was completed in April of 1998. The data and maps were released to the public the following May(Burns and Liss, 1998).

Ground geophysics studies were included in the mining district study to corroborate the airborne survey and aid in the identification of mineral potential in the district. Several methods were considered based on the following factors: time required to conduct a survey, manpower required to conduct a survey, amount of information that would result, and whether a given method was appropriate to the presumed target and environment. Two methods were selected for the 1998 field season; ground penetrating radar (GPR) and a portable magnetometer combined with a very low frequency (VLF) electromagnetic receiver. The GPR was selected to test the capability of the method at determining depth to bedrock and channel locations at selected placer deposits. Seismic methods were considered but discarded based on the manpower and time requirements. The use magnetometer with VLF was selected based on the ease of use and robustness in the field, and for the ability to correlate field surveys with anomalies identified in the airborne data.

Ground Penetrating Radar

The purpose of this study was to test the feasibility of using geophysical methods to measure depth to bedrock in placer gravel deposits. The GPR method was selected because it provides high resolution information and is very easy to use. The equipment can be set up in a very short time, requires only one operator, and does not require making physical contact with ground thus allowing rapid acquisition of data. The resulting data are straightforward to interpret with minimal processing.

Methodology

The GPR pulse-echo method records the reflected energy of a radar pulse that propagates into the earth. The system is analogous to reflection seismic imaging, but uses radar waves rather than seismic waves. The energy requirements for generating these radar waves is very small, and a transmitted pulse can be generated by a portable battery-powered unit.

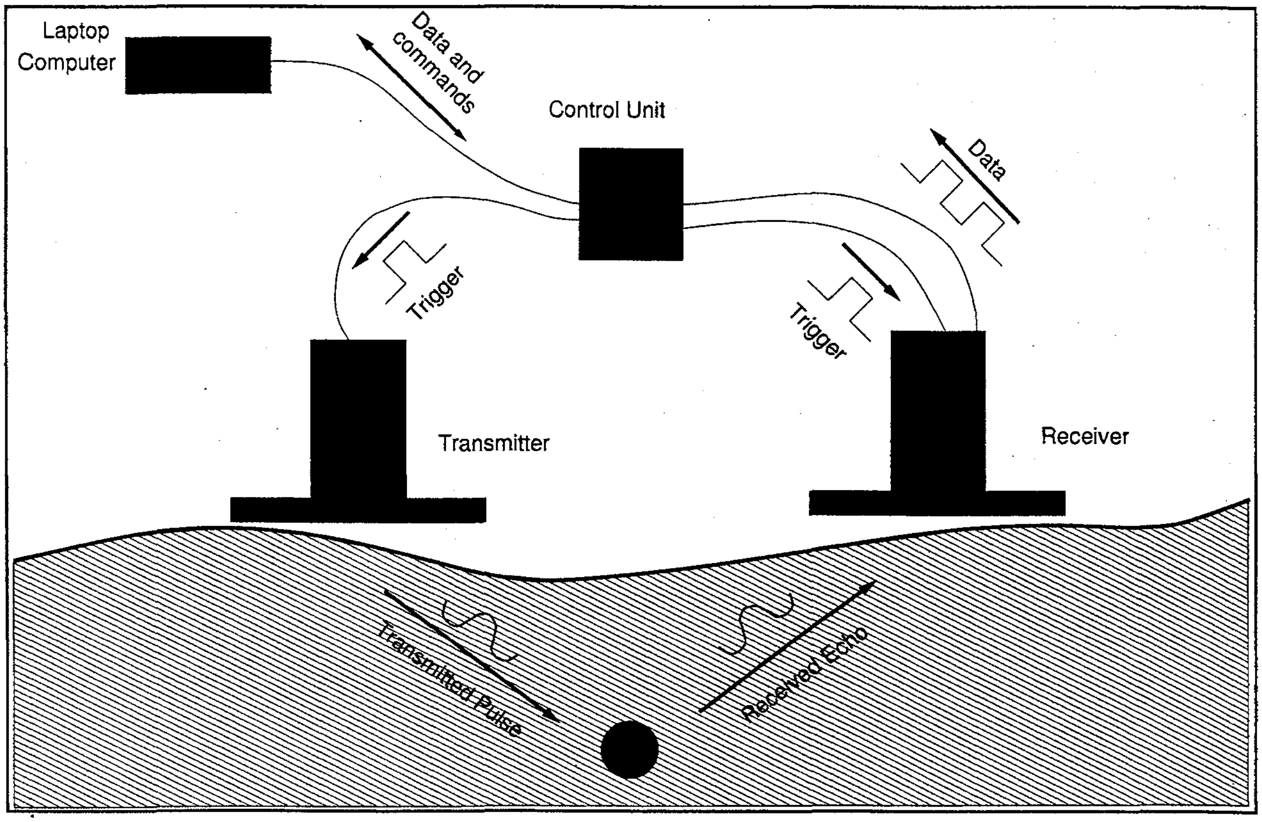

Figure 1 Diagram of GPR system components. The control unit connects to the parallel port of the laptop computer. The antennas connect to the control unit with fiber optic cables (after RAMAC/GPR operating manual, MALA Geoscience

The GPR system used was a RAMAC/GPR unit manufactured by [1]MALA Geoscience of Sweden. It is composed of a backpack-mounted control unit, a transmitting antenna unit, and a receiving antenna unit (Figure 1). Communication between the control unit and the antenna units is through fiber optic links. The transmitting unit can transmit at frequencies of 50, 100, 200, and 400 MHz depending on the set of antennas in use. The receiver unit records digital samples of the reflected signal at rates from 300 to 6000 MHz. The analog to digital converter has 16 bit resolution, with a dynamic range of 150 dB. The system requires a laptop computer to operate the control unit and store information to disk.

Field measurements were of two types: walkaway soundings and profiles. The walkaway sounding, or walkaway test, provides useful information on the gravel material at the site and important calibration information. The profile is conducted by recording while traversing a line on the ground and yields a cross-section of the underlying geologic structure. When performing a walkaway sounding the receiver antenna is placed on the ground with the transmitting antenna a short distance away. Recording is initiated and the transmitting antenna is slowly moved away up to the maximum distance supported by the fiber optic cable. This yields a collection of data traces that reveal two distinct sets

[1] Mention of a specific brand name or manufacturer is for information purposes only and does not imply endorsement by the Bureau of Land Management.

of waveforms. The inverse of the slope of each waveform indicates the speed at which the wave traveled. The first arrival, a gently sloping waveform, indicates the arrival of the direct wave that travels through the air from the transmitter to the receiver. The second arrival, with a steeper slope, is the arrival from the radar wave transmitted through the earth. It provides an accurate estimate of the velocity through the earth at that location. The velocity is needed to convert from travel times to depths. The walkaway test has an additional benefit in that the inverse of slope of the first arrival is the speed of light, a known quantity of 300 meters per microsecond (300 m/us). This can be compared with the calculated velocity to adjust system timing calibration.

For a profile the transmitting and receiving antennas are held a fixed distance apart and moved concurrently along a path over the ground while recording. This is facilitated by mounting the antennas to a carrying frame which can be held by the operator. The operator selects the transmitting frequency by using the desired set of antennas.

All other parameters of data acquisition can be selected from within the computer program that performs the transmitting and recording. Recording is initiated and the operator walks along the profile carrying the antennas a small distance above the ground, ideally just a few inches but occasionally higher to allow for brush. At a predetermined spacing along the profile line the control unit transmits a radar pulse and records reflected energy signals. The recorded signal trace is saved to disk, and while the operator continues walking the process repeats at each increment of the desired spacing.

The resulting compilation of traces can be viewed on the computer screen to see a two-dimensional representation of the geological cross-section. The horizontal dimension is distance along the profile line. The vertical dimension is traveltime. If a reliable estimate of the propagation velocity is known (e.g.. from a walkaway test), the traveltime can be converted to depth.

The reflected signals recorded in a GPR profile indicate changes in electrical properties in the earth. If these changes occur coherently, as seen at the water table, in the transition from one sedimentary layer to another, or in the transition from unconsolidated material to bedrock, then the resulting GPR profile will indicate a strong continuous reflection.

If the underlying material is jumbled as in glacial till then the radar reflections will be incoherent, and it will be difficult to identify structural features in the GPR section. The depth of penetration of the radar signal is limited by the electrical conductivity of the ground. In more conductive rock the signal attenuates at shallower depths. This can severely limit the depth of penetration in conductive soils. However, in resistive soils overlaying conductive bedrock, the sudden attenuation of the signal may indicate the bedrock interface.

Switching to lower frequency antennas will increase the depth of penetration, but since the wavelength increases with lower frequencies, the vertical resolution will decrease. Under ideal conditions the attenuation and diffraction of the radar pulse may provide information as to the material composition of the subsurface, but in field applications this is not practical.

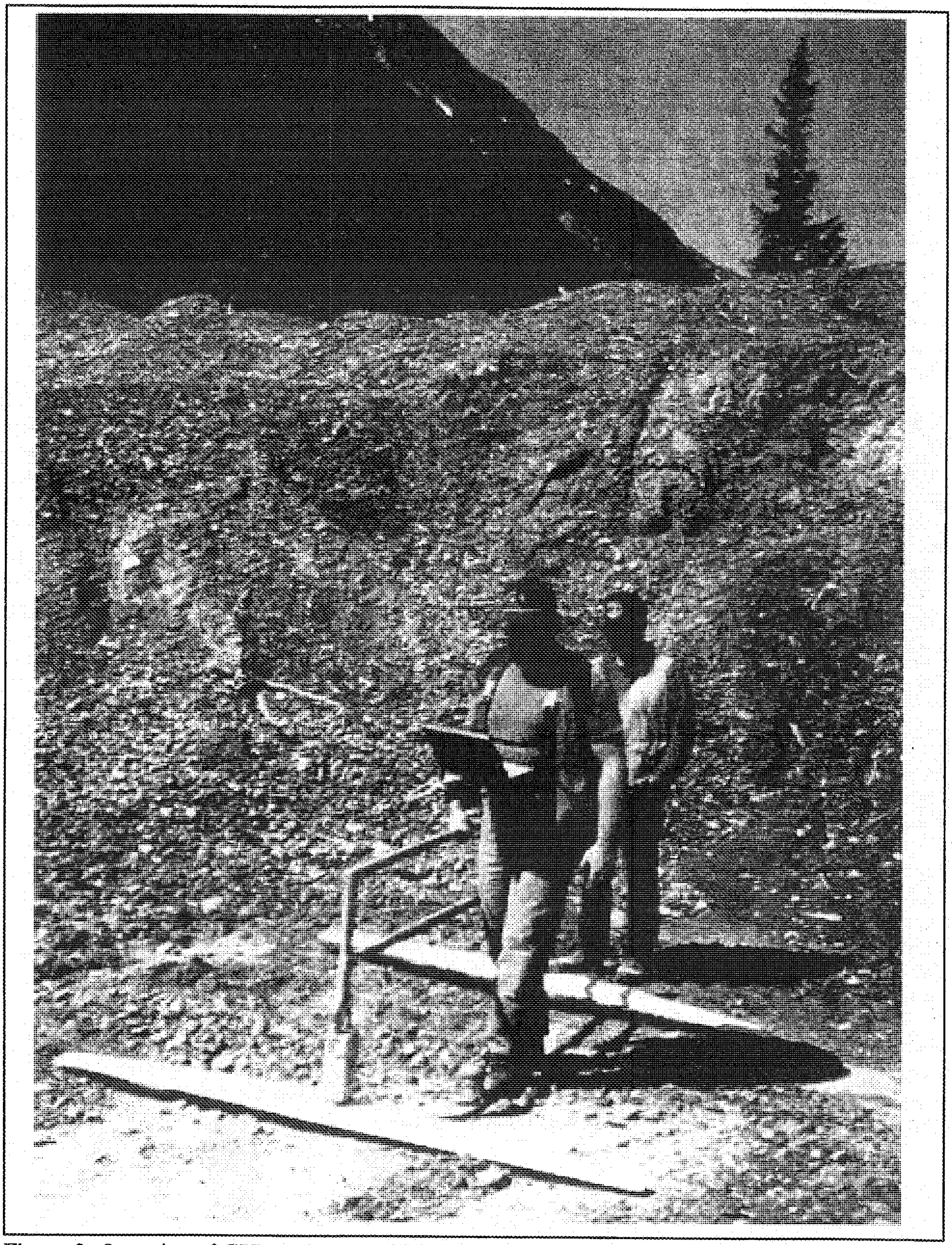

Figure 2 Operation of GPR equipment utilizing 50 MHz antennas

GPR Data Acquisition Figure 2 shows the GPR system in use. The operator is carrying the control unit on his back, a portable computer on his chest, and the 50 MHz antennas mounted on a carrying frame. Antenna frequencies of 50 and 100 MHz were used. Sample recording was triggered by a digital hip chain that transmitted a trigger pulse to the GPR control unit.

GPR Data Processing The raw GPR data was processed using software developed by BLM to meet the specific needs of this project. The processing steps were as follows:

Remove Offset: one of the peculiarities of the RAMAC GPR system is the addition of an integer offset to digitized data. Traces that should oscillate around zero instead oscillate around the offset value. This creates havoc with filtering routines, so the offset was removed.

Generate and Interpret Power Spectrum: the power spectrum shows the relative strength of different frequencies in the recorded data. The spectrum should show a peak at the antenna frequency; peaks at other frequencies are due to 'noise' in the data.

Apply Frequency Domain Filter: if the power spectrum showed a significant amount of energy at frequencies different from the antenna frequency, then a frequency domain filter was applied to reduce the noise at these frequencies.

After processing the raw data, velocities were calculated for the walkaway tests. These velocities were applied to the time sections of the profiles to convert to depth. The resulting depth section was interpreted to identify features such as bedrock and the water table.

Field Sites and Results

Slisco Bench Slisco Bench is located between Buckeye Gulch Creek and Vermont Creek on the south side of the Hammond River (Fairbanks Meridian, township 31N, range 12W, section 13). The area has been mined since the early 1900's and hosts several current placer claims. The bench consists of unconsolidated gravels to depths of at least 33 meters(100 feet) (TriCon well logs). Access was via helicopter, but depending on road conditions one can drive within 1/4 mile of the site via the Hammond River. A profile was conducted from the south extent of the bench bearing north, along line SB0, as shown in figure 3. The objective at this site was to determine if GPR could identify depth to bedrock. Measurements were attempted with both 100 MHz and 50 MHz antennas, but the 100 MHz antennas could not get sufficient penetration.

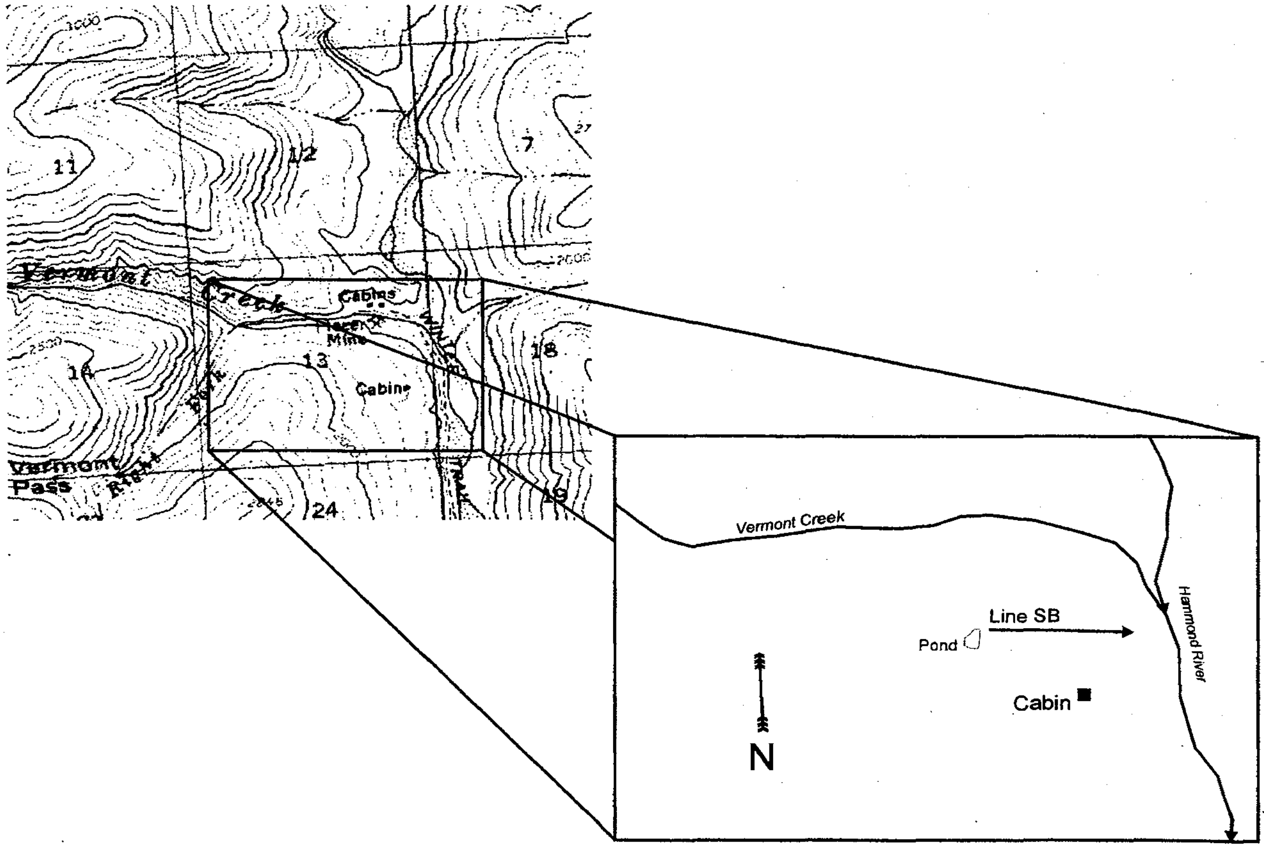

Figure 3 Profile location at Slisco Bench.

The depth to bedrock at this location is too great to see with the GPR. Figure 4 shows the results of the lower half of line SB0, from the pond bearing north to the bluff. Processing included the removal of DC offset and conversion from time to depth. A value of 80 m/ns was used for depth conversion, selected from diffraction hyperbolae evident in the time section.

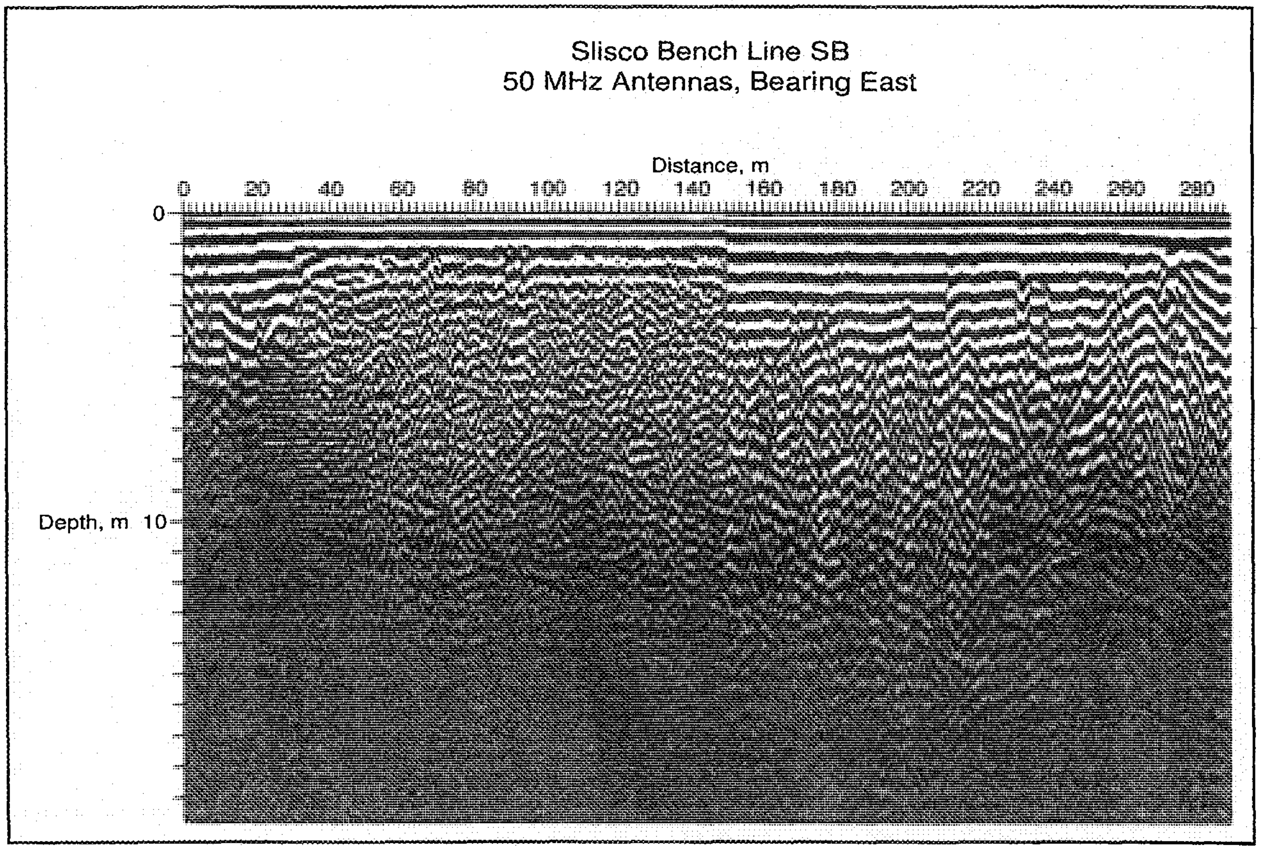

Figure 4 Slisco Bench profile along line SB from pond bearing east. Some reflections are evident at a depth of approximately 10 m, most likely sand or clay layers. The signal attenuates completely by 15 m, making it impossible to determine depth to bedrock (2933 traces sampled horizontally every 0.1 m, 517 time samples per trace with a sampling frequency of 1041.67 MHz using 50 MHz antennas).

<u>Workman Bench</u> Workman Bench is located just south of the confluence of Smith Creek and Nolan Creek (Fairbanks meridian, township 31N, range 12W, section 33). Access was via 4WD vehicle. The objective at this site was to locate a channel that had been worked to the north but the location of which was unknown as it plunged to the south. A profile was conducted along a bulldozer track perpendicular to the suspected channel, as shown in figure 5. Bedrock was evident at the surface at the beginning of the profile.

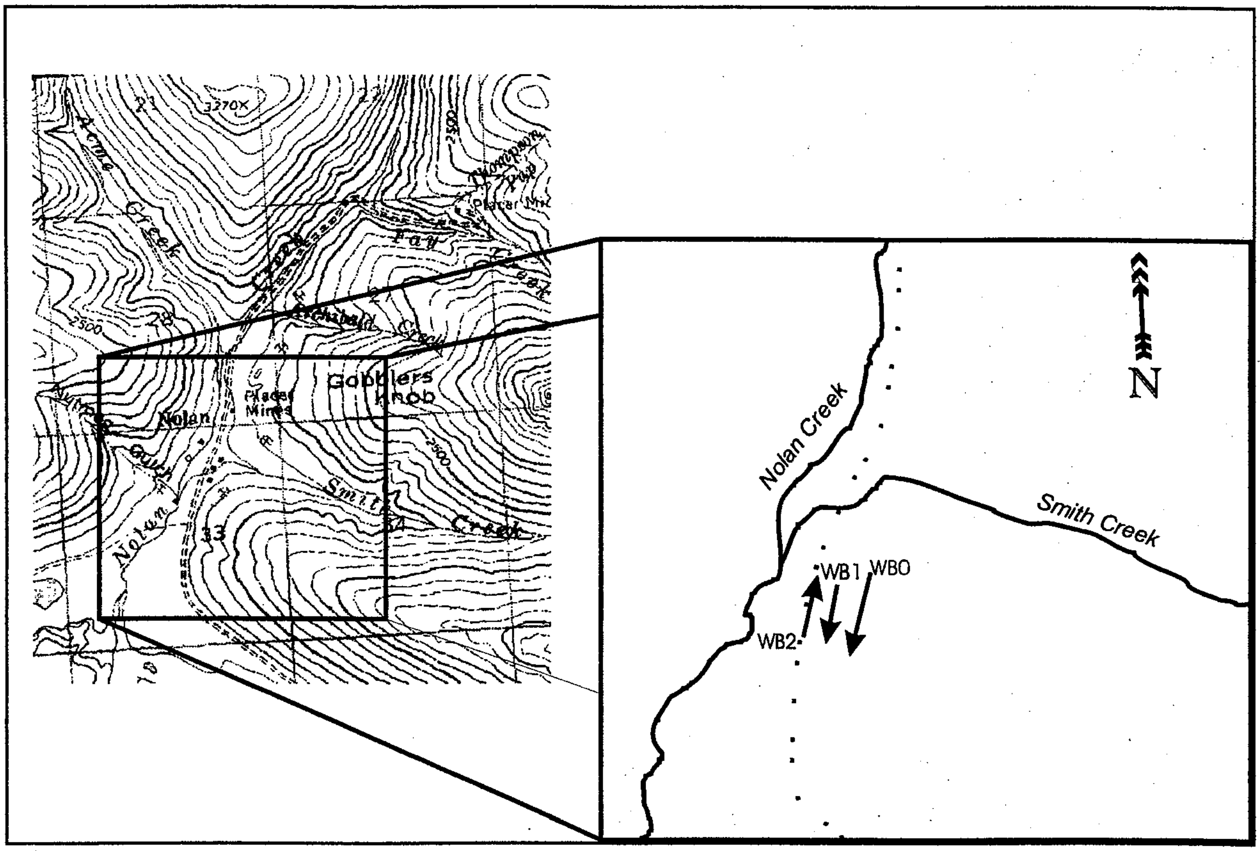

Figure 5 Location of Workman Bench profiles.

Figure 6 shows the depth section for line WBO. The strong horizontal lines are the effect of ringing in the system, and don't indicate actual ground conditions. Bedrock is present at or near the surface at the beginning of the profile, and can be seen dipping down beginning at 90 m along the profile. The interpreted bedrock profile is shown in figure 7.

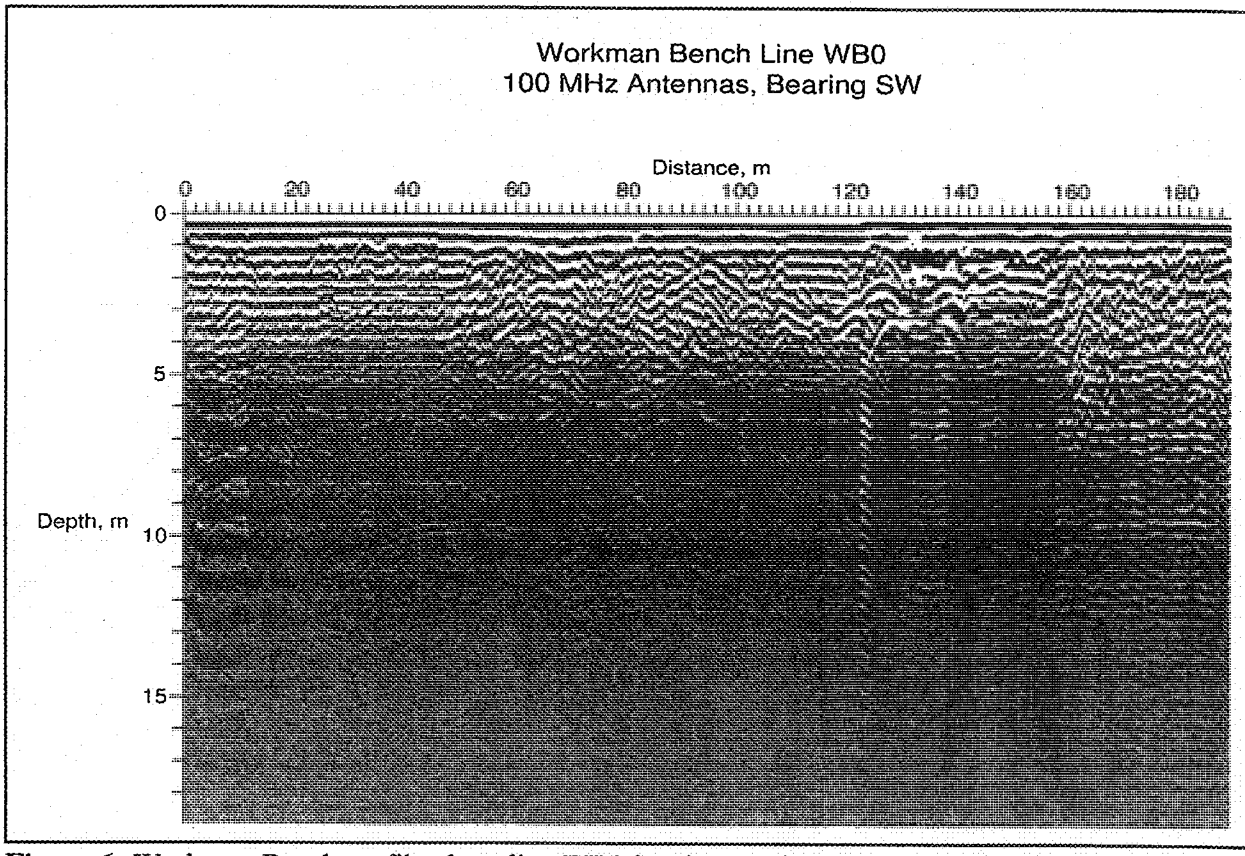

Figure 6 Workman Bench profile along line WB0 bearing southwest. Bedrock is visible at 90 m along the profile as it dips down to a depth of 3 m (1940 traces sampled horizontally every 0.1 m, 696 time samples per trace with a sampling frequency of 1651.76 MHz using 100 MHz antennas).

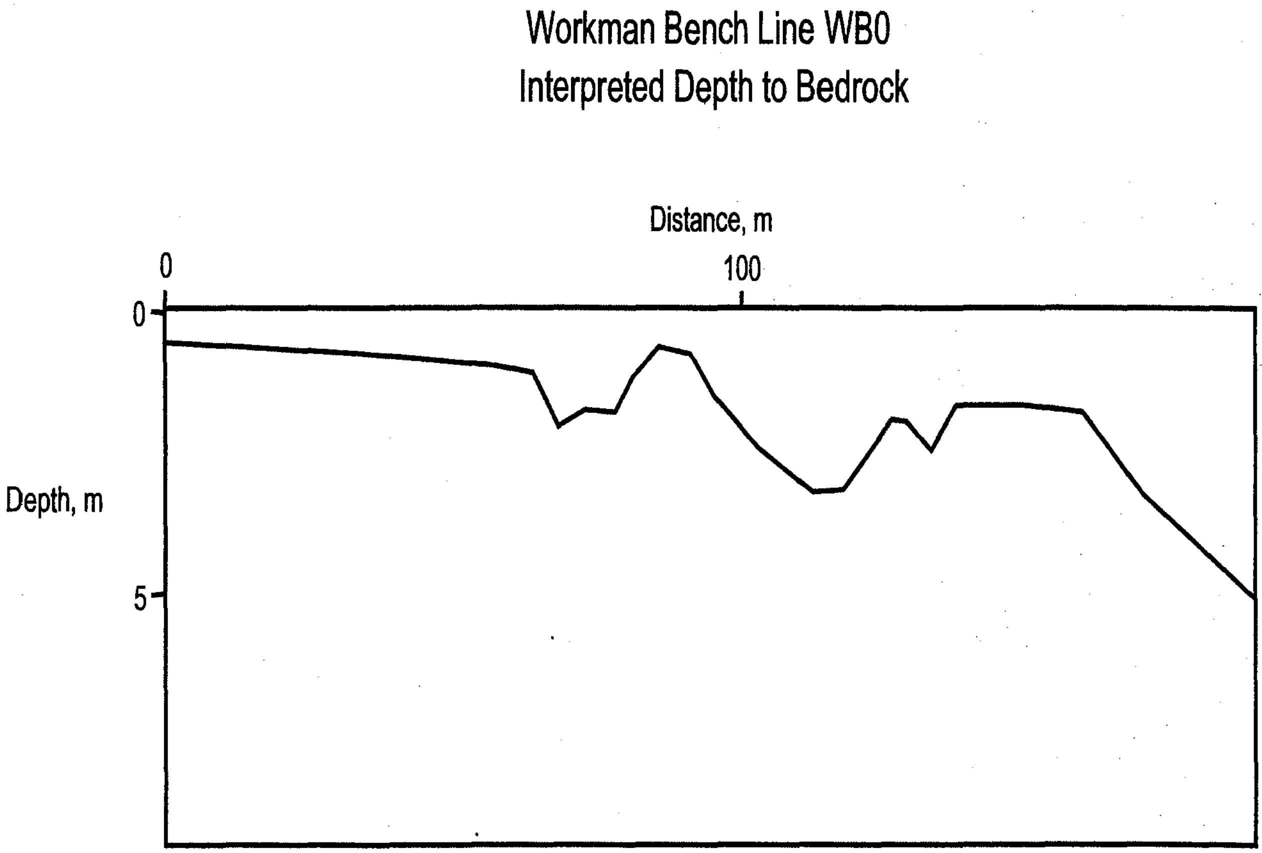

Figure 7 Interpreted depth to bedrock for profile WB0

Additional profiles were conducted parallel to line WB0. Figures 8 and 9 show the converted depth sections for these profiles. With no continuous reflectors evident it is not possible to determine depth to bedrock. The signal attenuates completely at a depth of 7 m, indicating bedrock lies beyond that depth.

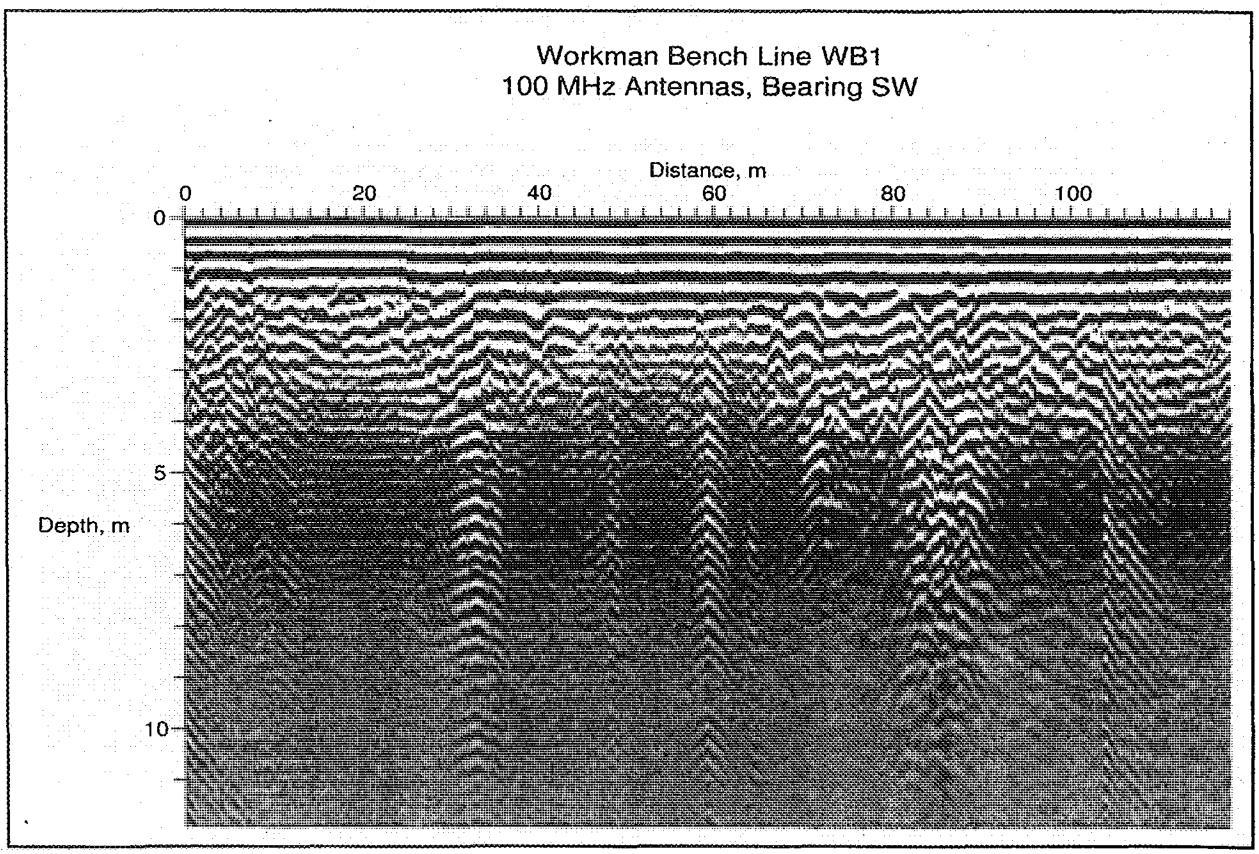

Figure 8 Depth section for profile WB1.

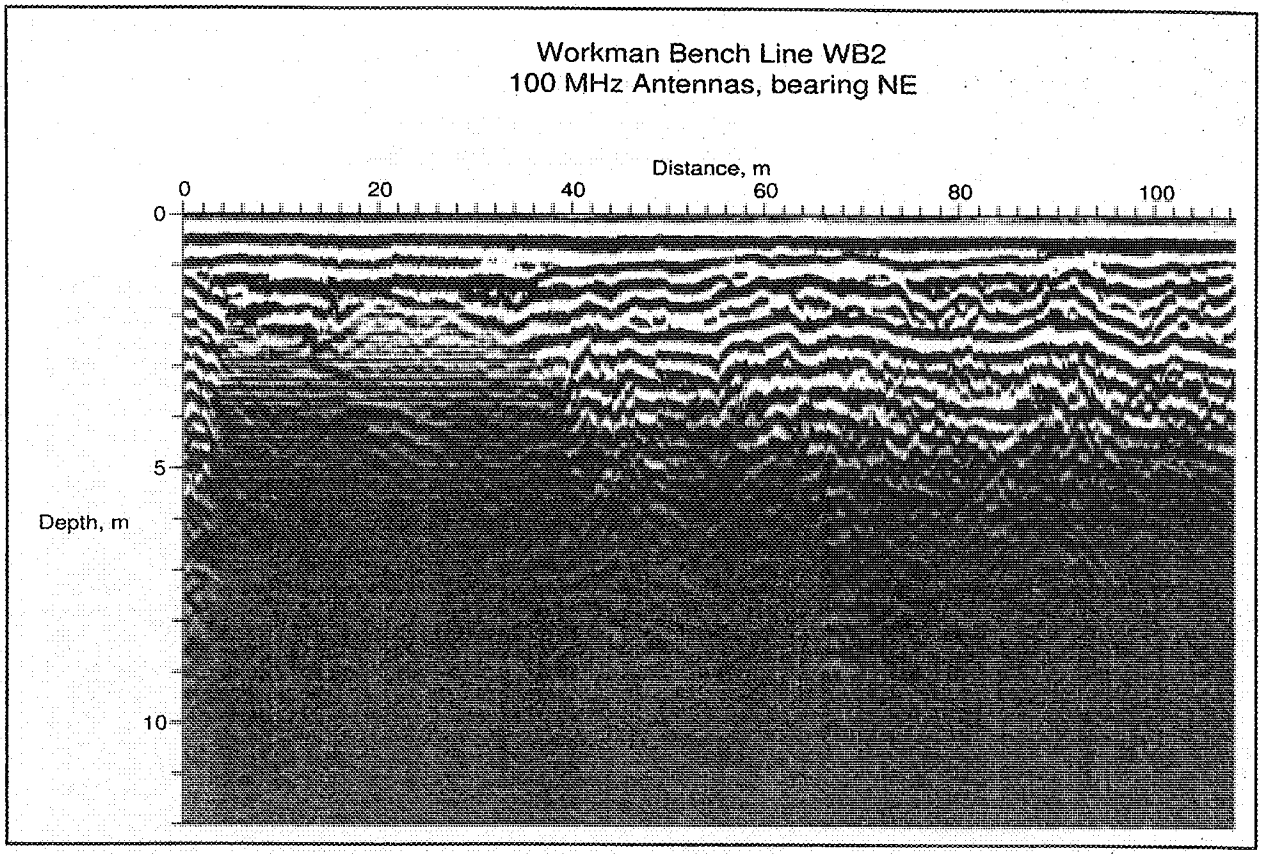

Figure 9 Depth section for profile WB2.

Linda Creek The Linda Creek profile is located at the Linda Creek Mine, over the underground placer workings that follow an ancestral channel of Gold Creek covered by glacial drift (Fairbanks meridian, township 31N, range 10W, section 7). The objective of this profile was to identify depth to bedrock and perhaps locate mine workings. In addition to the profile a walkaway sounding was conducted at the mine site. Figure 10 shows the profile location.

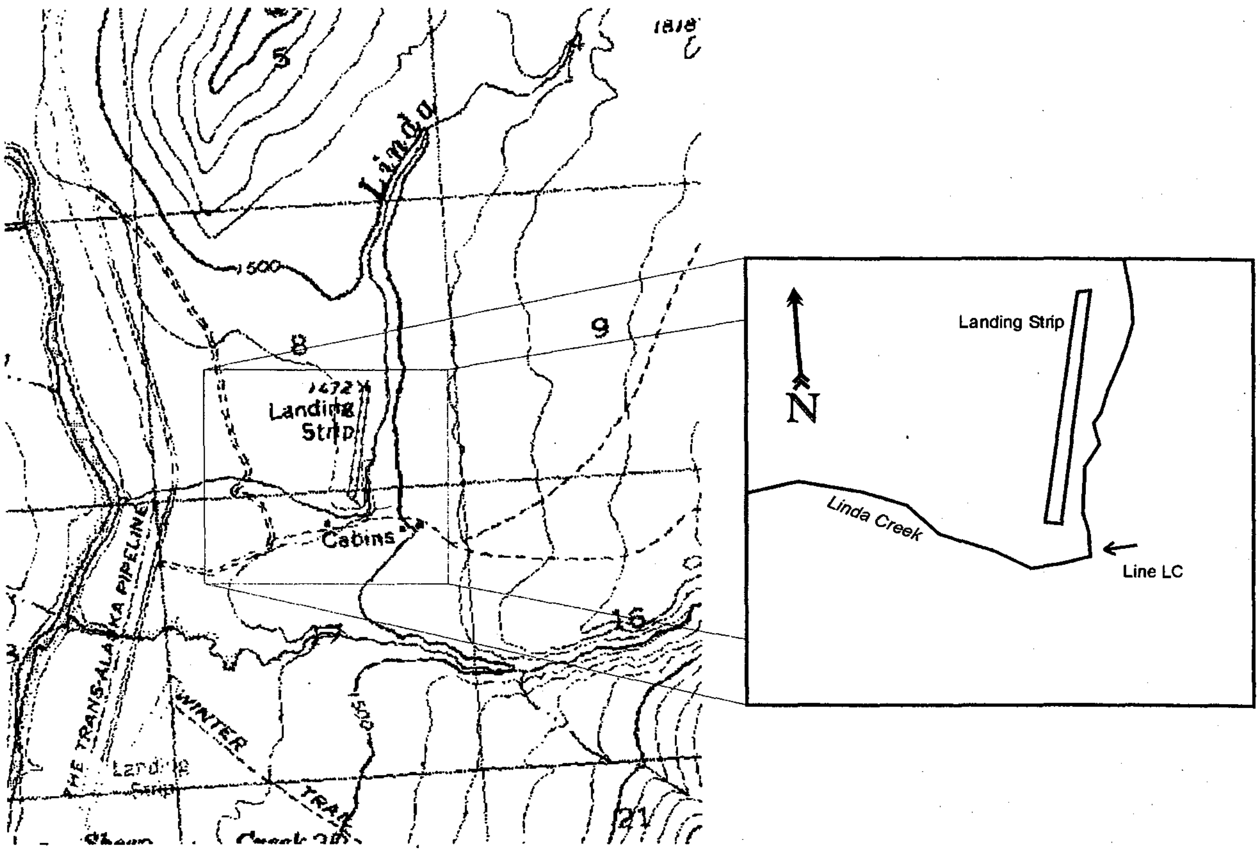

Figure 10 Location of line LC. Profile started at east end bearing west.

Processing of the time section data was limited to DC offset removal and conversion to depth. A velocity of 103 m/ns was determined from the velocity sounding and used for the depth conversion. Figure 11 shows the converted depth section. A strong continuous reflector is evident across the profile, starting at a depth of 25 m at the beginning of the profile and ending at 17 m at the end of the profile. This reflector could be bedrock, but the presence of additional small weak reflectors at greater depth along the profile suggest deeper sediments. The strong continuous reflector is most likely a distinctive layer of sand or clay that varies significantly from the surrounding material.

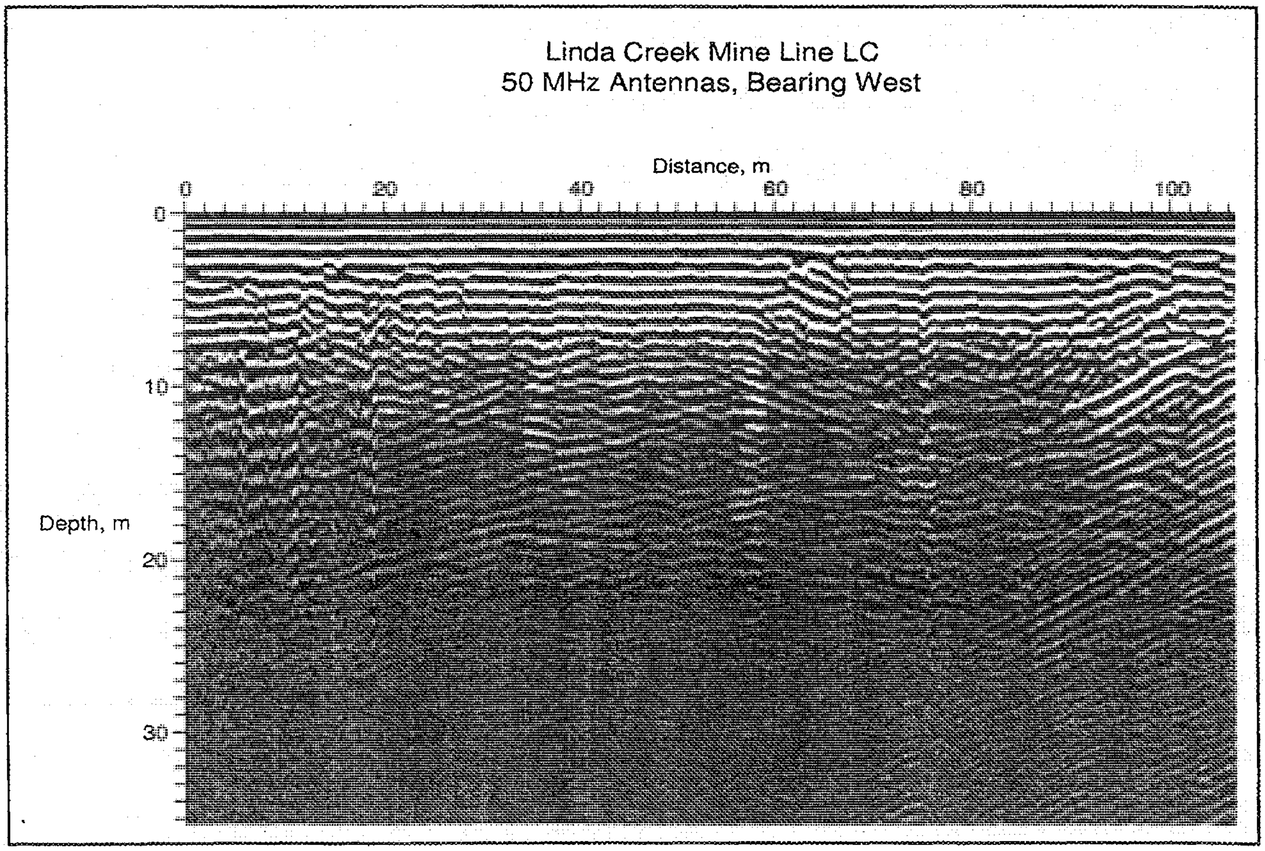

Figure 11 Depth section of Linda Creek Profile.

Magnetics and VLF Conductivity

Methodology

A magnetometer measures magnetic flux density, which is proportional to the earth's magnetic field. It is a single point measure at the location of the sensor. Static distortions in the earth's magnetic field are due to magnetic minerals in the rock, such as magnetite or pyrrhotite. A proton precession magnetometer uses a fluid rich in hydrogen atoms such as kerosene or methanol. A small magnetic field is generated to polarize the hydrogen nuclei along a new orientation. As the nuclei return to normal they spin, or precess, around the new axis. The frequency of this precession can be measured and correlates with the magnetic flux density.

VLF surveying makes use of the radio signals broadcast from navigational stations throughout the world. These signals are deflected in the vicinity of a conductive body. The sensors record the signal strengths of the horizontal and vertical components of selected frequencies. By observing the changes in the VLF fields the location and size of a conductor or ore body can be determined.

Data Acquisition The equipment used included a GEM systems GSM-19 Overhauser magnetometer with gradiometer and VLF options. The GEM Systems manual reports a sensitivity of 0.02 nT and a sampling rate of up to 5 Hz. This backpack-mounted system can be operated by an individual. The gradiometer option allows for a second sensor mounted 0.5 m above the first sensor and measures the vertical gradient of the total magnetic field. Gradiometer data collected in this manner is more sensitive to near surface anomalies. The VLF feature includes an omnidirectional antenna mounted at the base of the backpack. VLF readings measure the vertical and horizontal field strengths at selected frequencies for known VLF signals. In the presence of a conductive body the electric field vector shifts, resulting in distinctive changes in the in-phase and quadrature components.

Station location control was maintained with a differentially corrected global positioning system (DGPS) unit. A Trimble Pathfinder Pro XL unit was used to record coordinates for every fifth station and differentially corrected via post processing. Coordinates for intervening stations that did not have a GPS reading were interpolated. While this introduced some error into station location coordinates, it provided for rapid profiling. This is essentially the same procedure used in airborne magnetometer surveys. Figure 12 shows the magnetometer and GPS units in use.

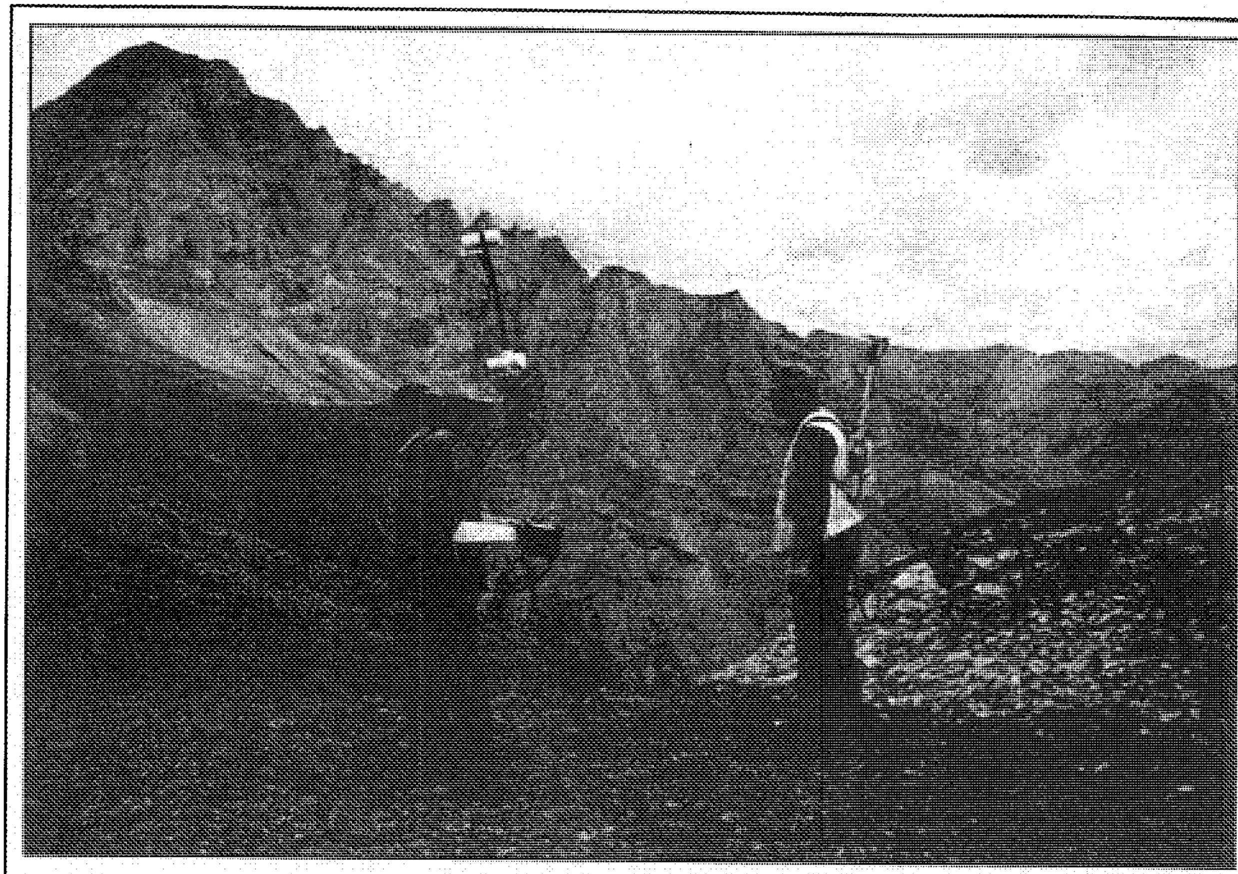

Figure 12 Field operation of the GSM-19 magnetometer with VLF and gradiometer options.

Two operators were used in this arrangement for performing the mag/VLF data acquisition. The magnetometer operator would flag the start of the line and take a reading. The operator would then proceed along the selected bearing a fixed number of paces and take another reading. At the same time the GPS operator was getting a location reading for the flagged location. At a selected number of stations, usually every 5 stations, the magnetometer operator would flag the location and the GPS operator would get a location at that station. In this manner the magnetometer operator could proceed at a fast rate without having to wait for the GPS readings, which could take several minutes. Diurnal drift in the magnetic field was accommodated by reoccupying the first location or a selected base location at the end of each profile.

<u>Data Processing</u> The data were processed using Oasis MONTAJ software published by Geosoft. Three processes were applied to the data:

Removal of drift - Diurnal fluctuations in the magnetic field and instrument drift were removed by reoccupying a base station before and after a survey and noting these times. Magnetic field readings taken during the survey are adjusted by interpolating the difference based on the time of the reading and subtracting that difference.

Gridding - Once the data are corrected for drift, they can be interpreted directly by plotting profiles. To combine several profiles into a map it is necessary to generate a grid of the data. A computer software program, Geosoft Oasis, was used to generate the grids and prepare the maps. A minimum curvature gridding technique was selected.

Identifying VLF anomalies - The VLF data collected synchronously with the magnetic data can identify areas of anomalous electrical conductivity. Profiles of the VLF data are reviewed manually, comparing the in-phase and quadrature channels, as shown in Figure 13.

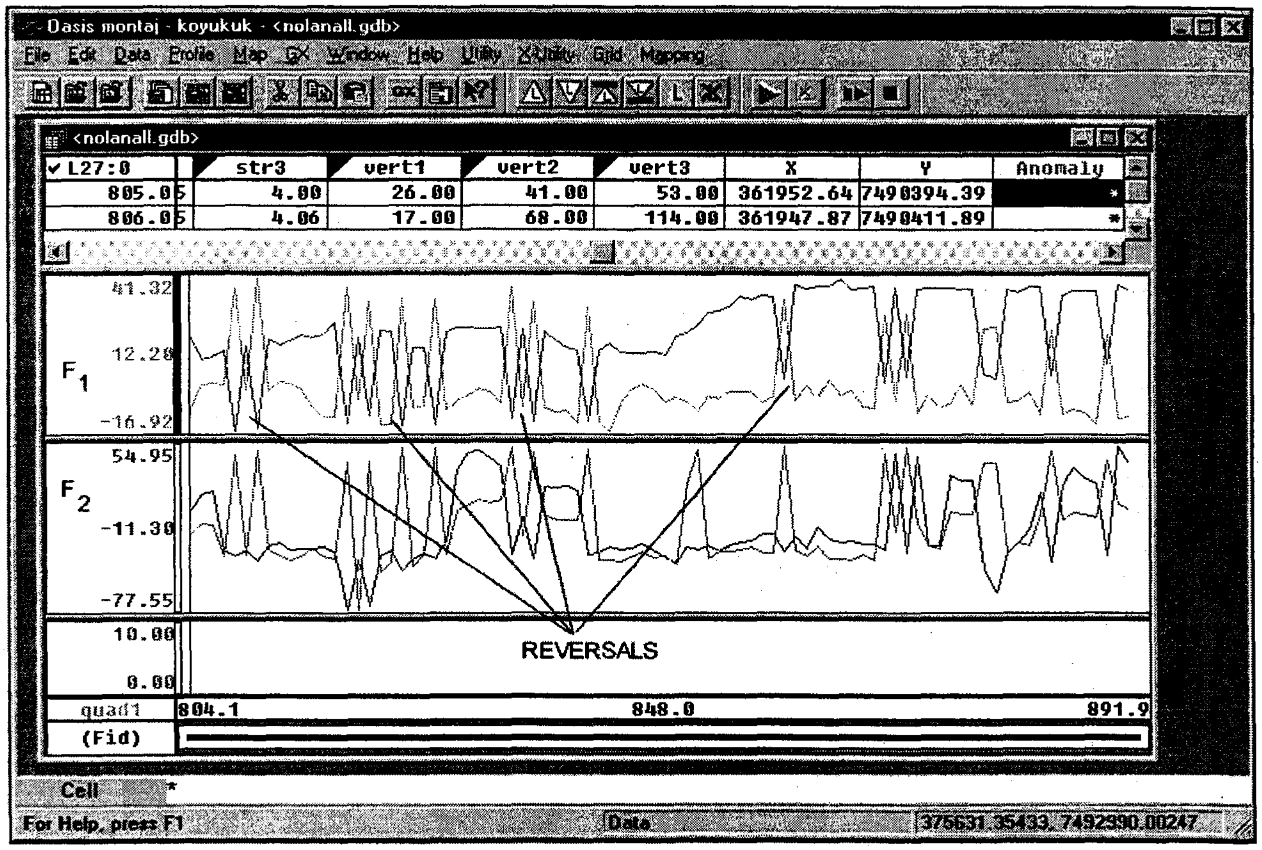

Figure 13 Screen capture of software program to aid in the identification of VLF anomalies. The reversals in the in-phase and quadrature components indicate a conductor near the surface.

Field Sites and Results

Linda Pass

The site at Linda Pass was selected based on an anomalous magnetic high as seen in the airborne data. It is located in the saddle east of Linda Creek, as shown in figure 14 (Fairbanks meridian, township 32N, range 10W, section 35). The anomaly is hosted in Devonian sediments and bisected by a suspected thrust fault striking east-west (Dillon and Reifenstuhl, 1995). Chloritic siltstone to the north is overlain by black phyllite to the south. Access was via helicopter. The objective at this site was to confirm the presence of an anomalous magnetic high and determine its extent. Measurements were taken along three parallel lines oriented N-S, with six cross lines oriented E-W.

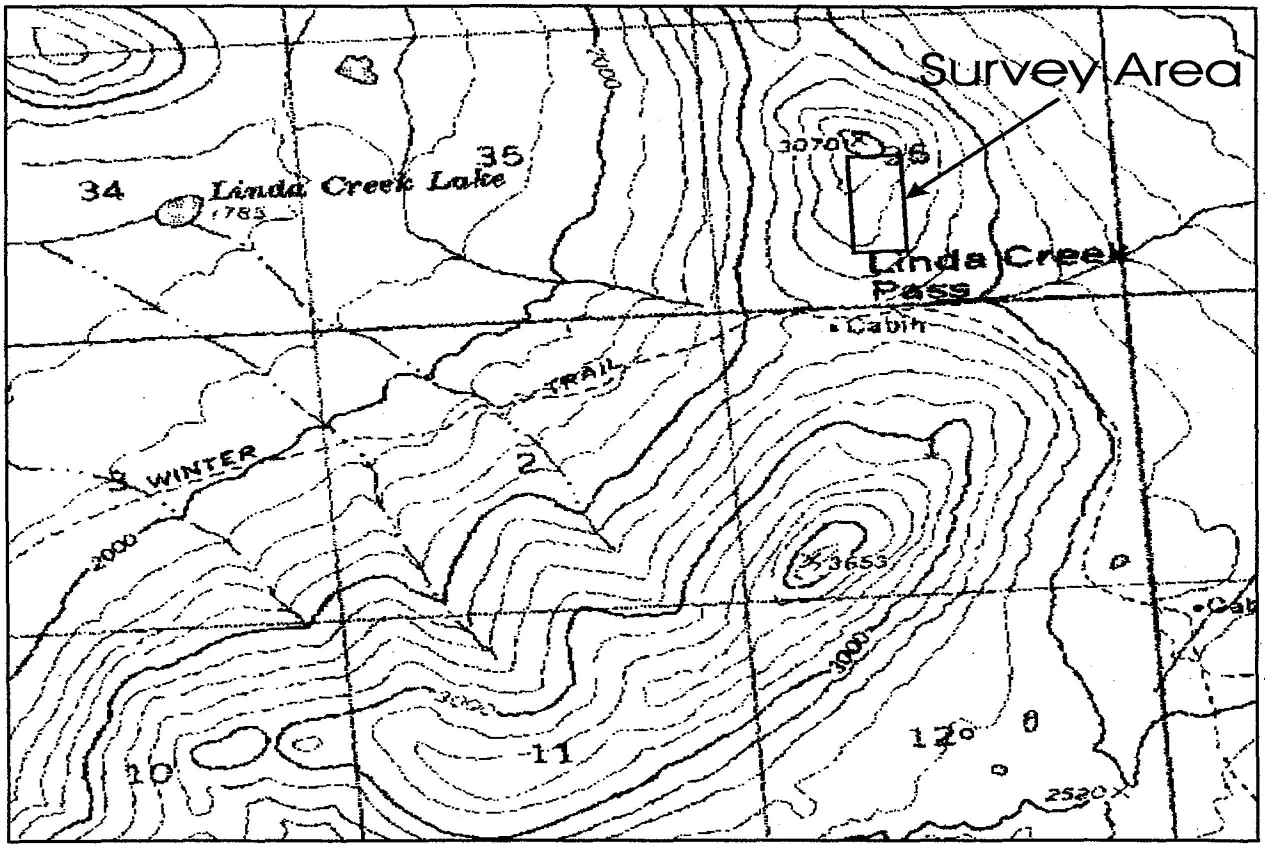

Figure 14 Location of Linda Pass magnetic survey.

Figures 15, 16, and 17 show the gridded total magnetic field, gridded magnetic gradient, and plot of VLF anomalies. The total field magnetic data show two distinct magnetic highs at the west boundary of the survey area. The gradient plot shows these same highs, in addition to some smaller features. The vertical gradient measurement is sensitive to near surface variations and hence appears as a noisier image. The VLF anomalies identified are located on the north and east boundaries of the survey area.

Hypothesizing as to the geologic features generating this local magnetic high and the conductive anomalies surrounding it is highly speculative without further investigation. Mineralization along the fault could be from altered chloritic siltstone, or may result from leaching of rocks deeper in the stratigraphic sequence. However there appears to be good structural control for defining the fault zone contacts at the north and south limits of the magnetic anomaly. The conductive anomalies identified by the VLF occur both in the fault zone and north of the fault zone and are inconclusive with respect to distinguishing between conductive minerals and groundwater.

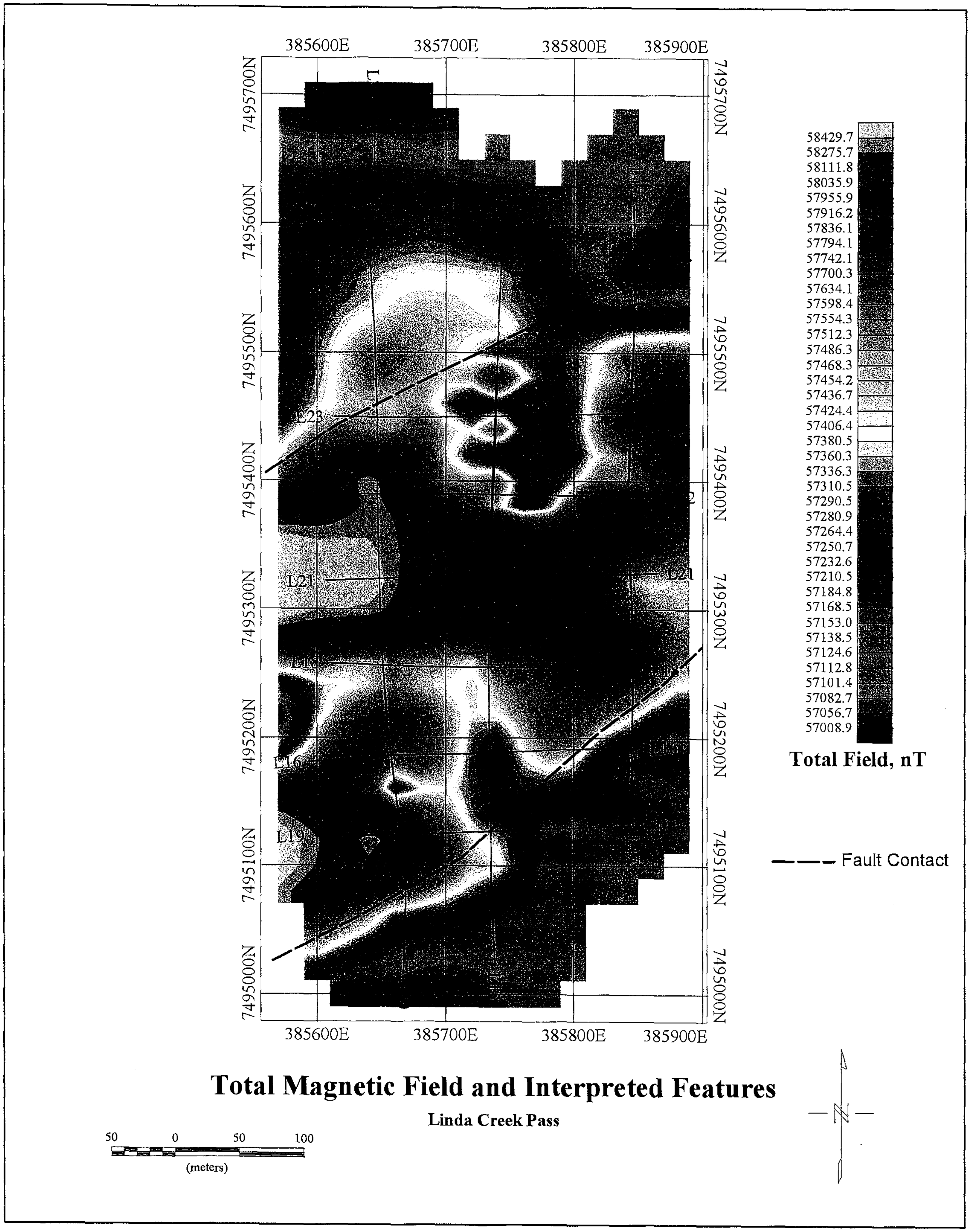

Figure 15 Linda Pass total magnetic field. Coordinates are in UTM zone 5.

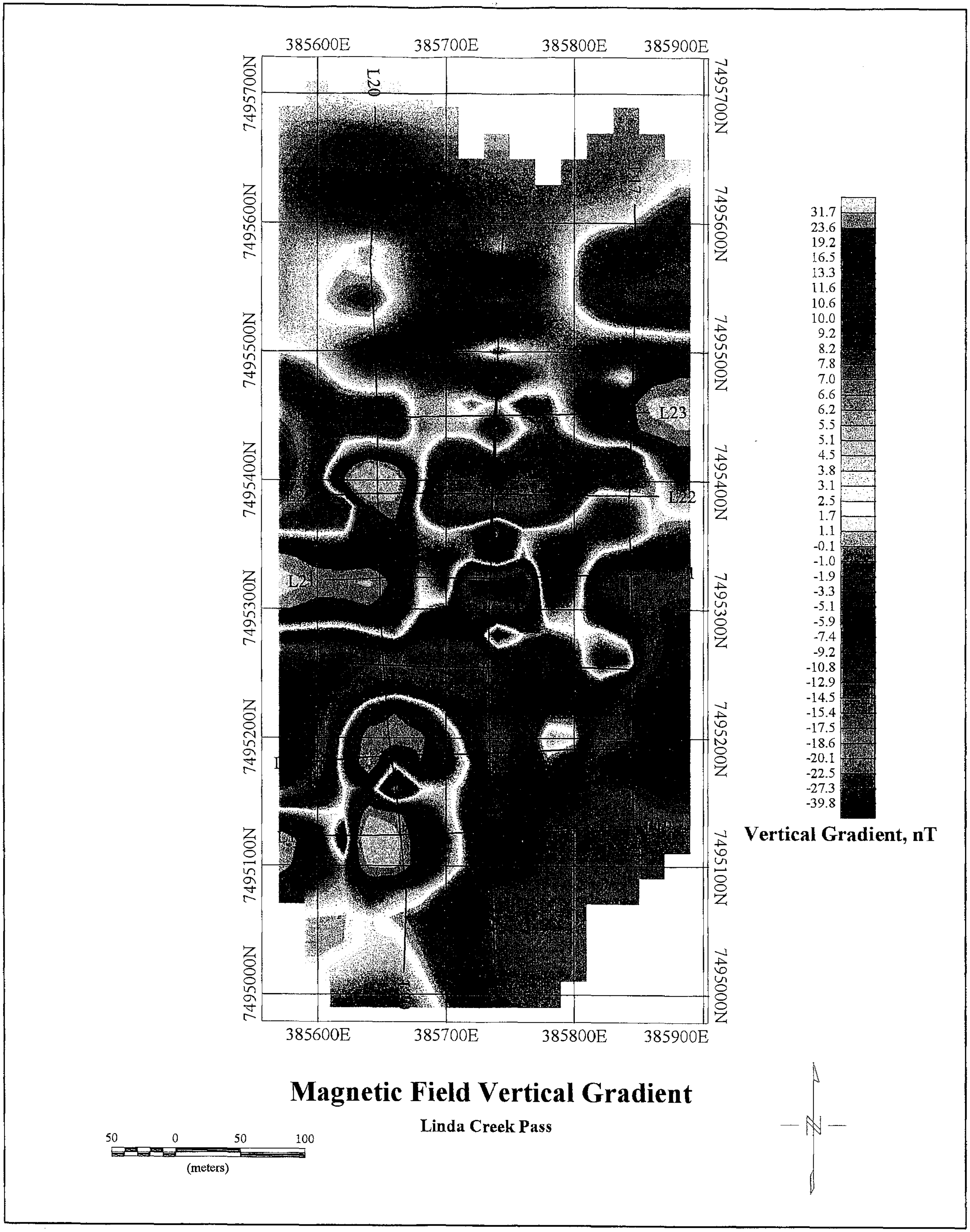

Figure 16 Linda Pass vertical magnetic gradient. Coordinates are in UTM zone 5.

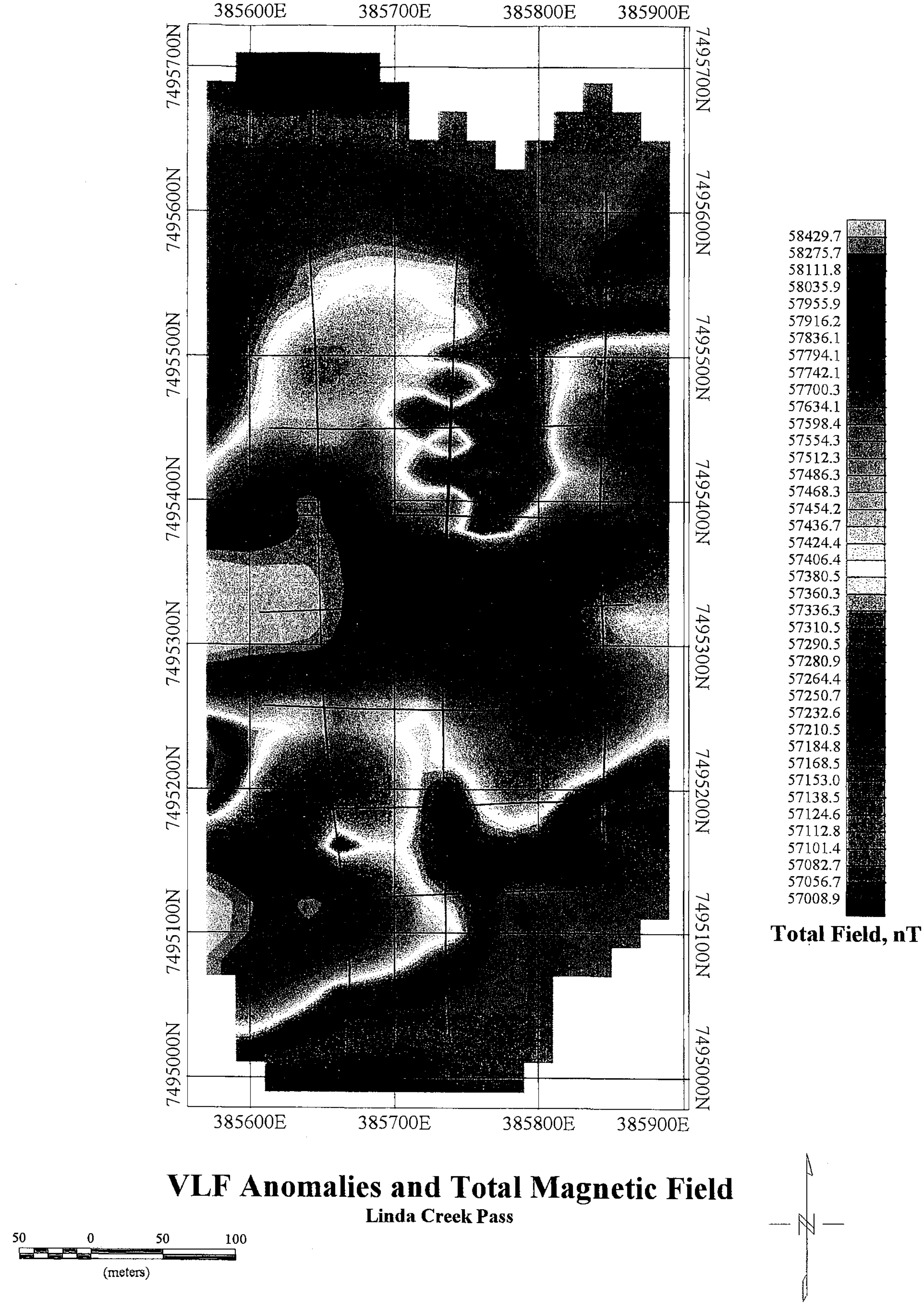

Figure 17 Linda Pass VLF anomalies. Coordinates are in UTM zone 5.

Venus Prospect

The Venus Prospect is located west of the confluence of Big Spruce Creek and an unnamed drainage, as shown in Figure 18 (Fairbanks meridian, township 32N, range 8W, sections 3 and 4). It consists of an altered granite porphyry that contains disseminated chalcopyrite and has been the target of several previous exploration efforts. Airborne magnetometer measurements indicate that the altered granite is depleted of magnetic minerals. Tactite has been mapped along the flank of the intrusive, with some minor skarn mineralization noted containing massive magnetite and pyrrhotite(WGM progress report). Airborne geophysics data show two magnetic highs southwest of the intrusive. The objective of the ground geophysics at this site was to determine how readily the magnetic anomaly from the airborne data could be delineated on the ground. Access was via helicopter. A survey consisting of profiles along eleven lines was performed, as shown in figure 19.

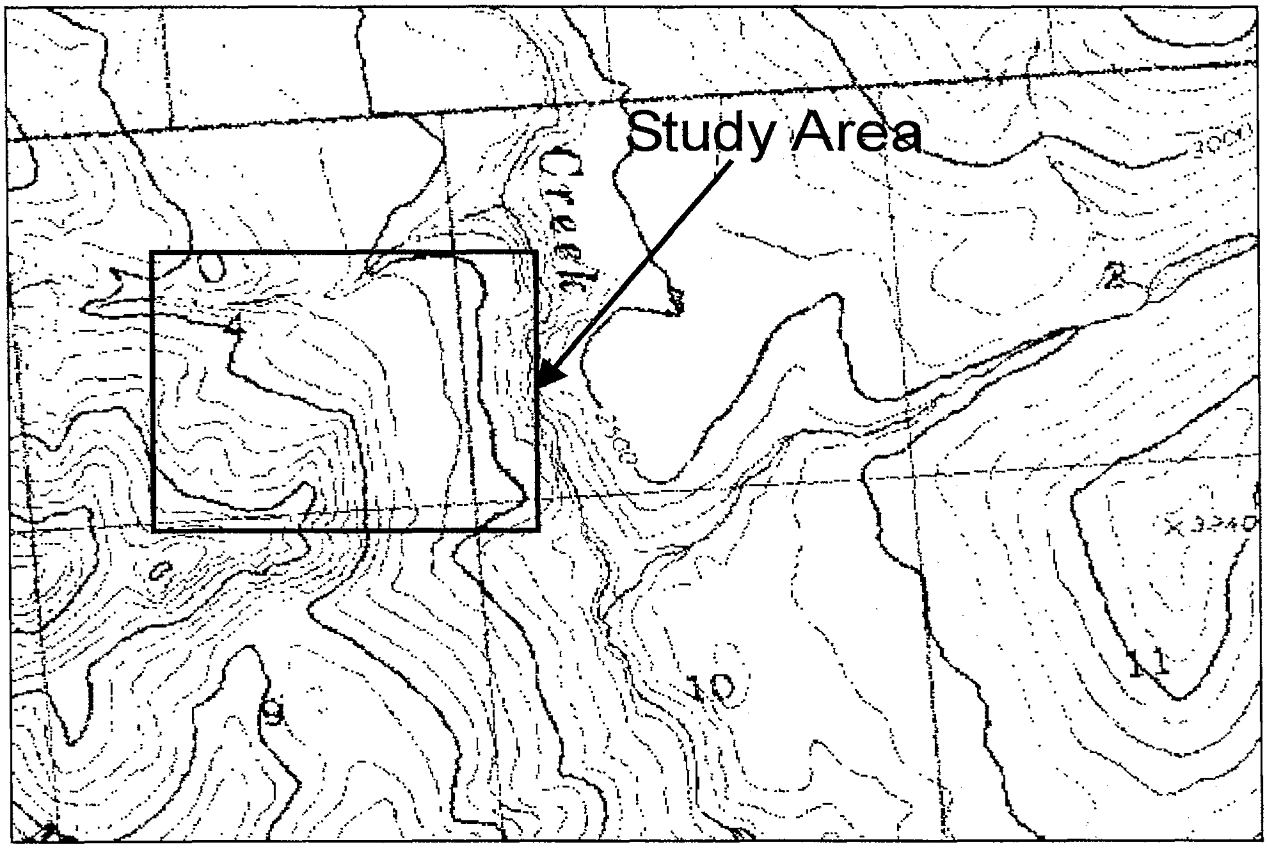

Figure 18 Location of Venus Prospect site.

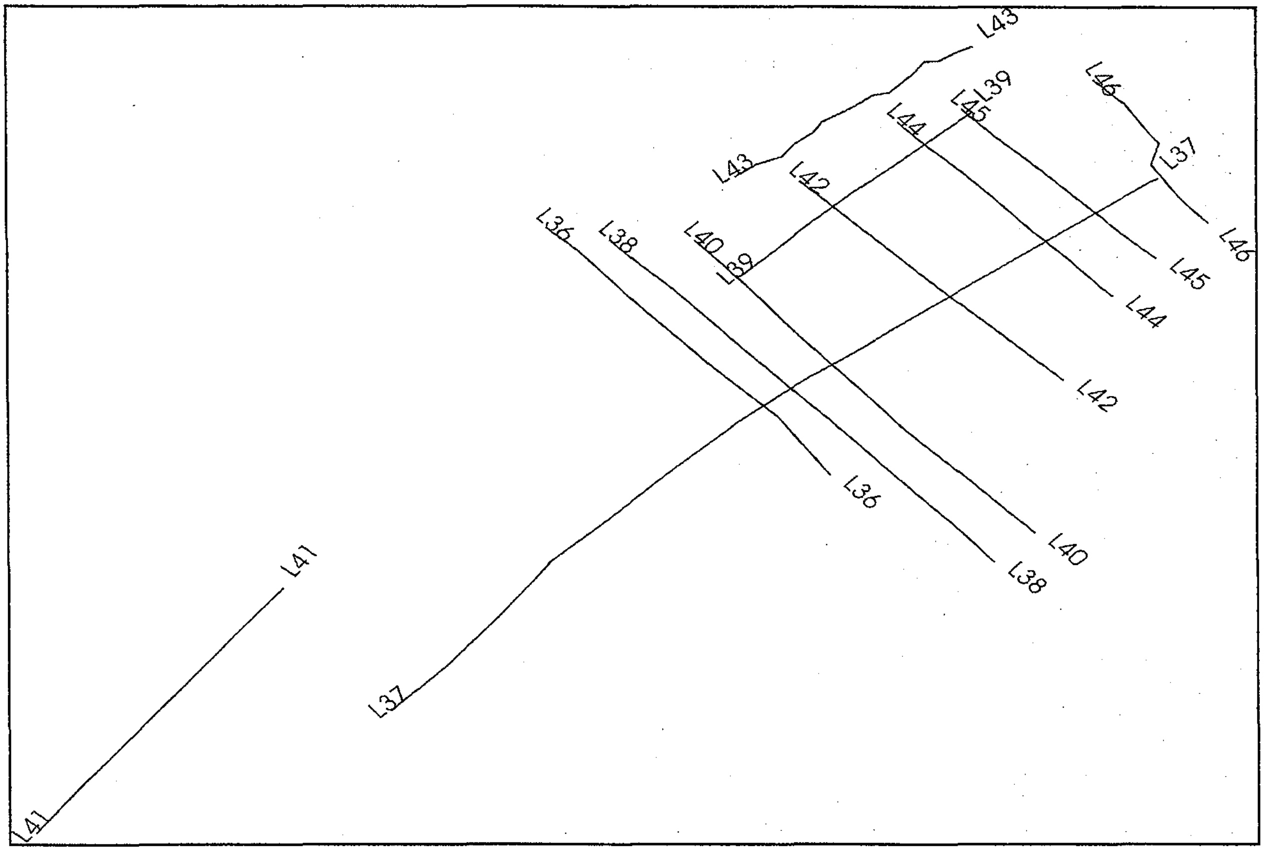

Figure 19 Survey lines for Venus Prospect.

Figures 20, 21, and 22 show the gridded total magnetic field, gridded magnetic gradient, and plot of VLF anomalies. The profiles intersected two distinct magnetic anomalies as shown in the total magnetic field data. Although coverage over the body to the southwest is incomplete, some inferences can be made by comparing the total field and gradient data. The total field anomaly for the northeast body is much higher in magnitude than for what was observed in the southwest body. In addition, the gradient data show much greater gradient over the northeast feature. The continuous high gradient over the southwest body suggests that it may be deeper than the body to the northeast. These conclusions are drawn from the limited data that intersect the southwest body and as such are highly speculative. Conductive anomalies appear throughout the entire survey area, with the exception of the center of the northeast body. While the anomalies may be due to mineralization, they may also be due to saturated surface soils. The highs seen in the total magnetic field may indicate more extensive skarn mineralization than was previously identified.

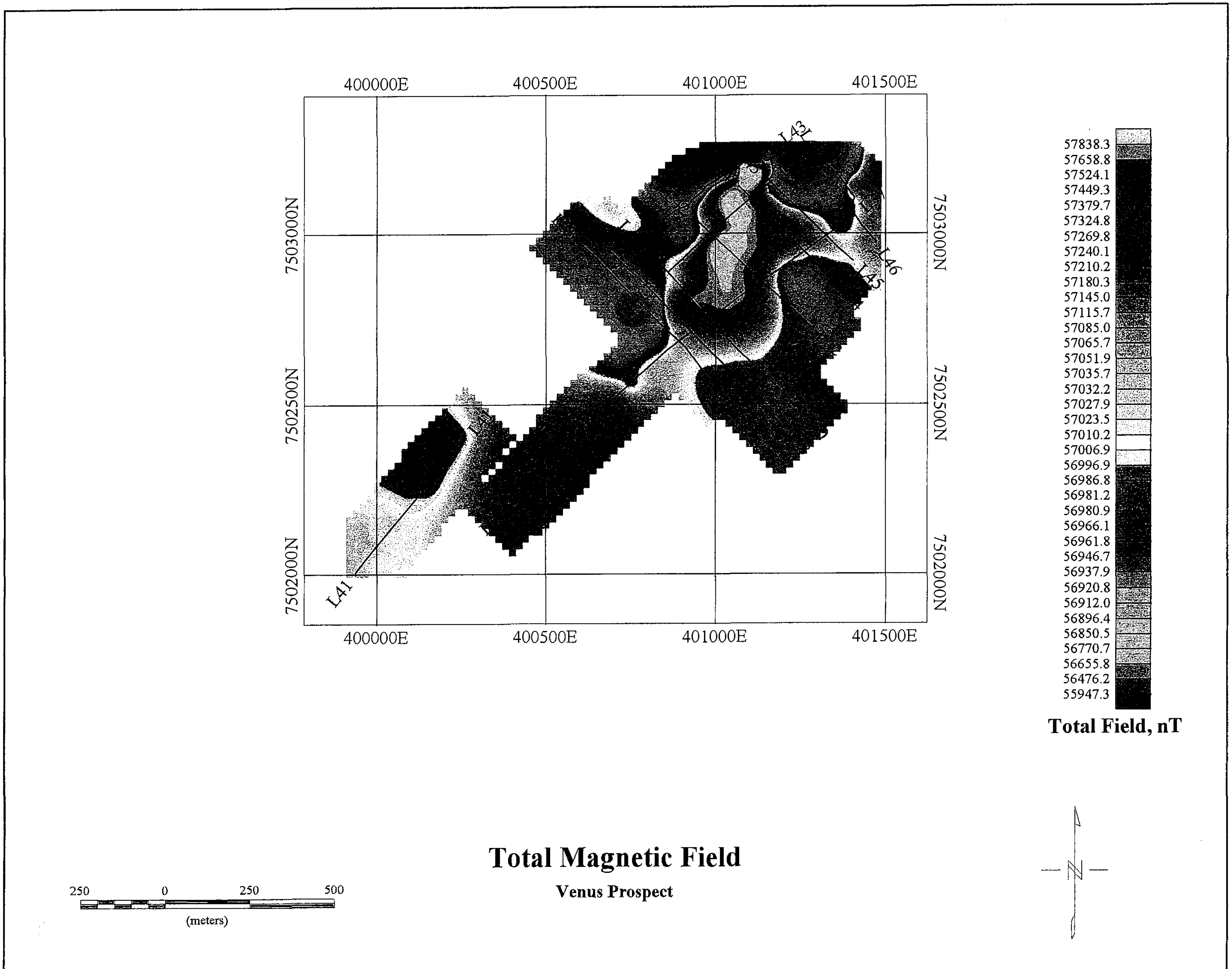

Figure 20 Venus Prospect total magnetic field. Coordinates are in UTM zone 5.

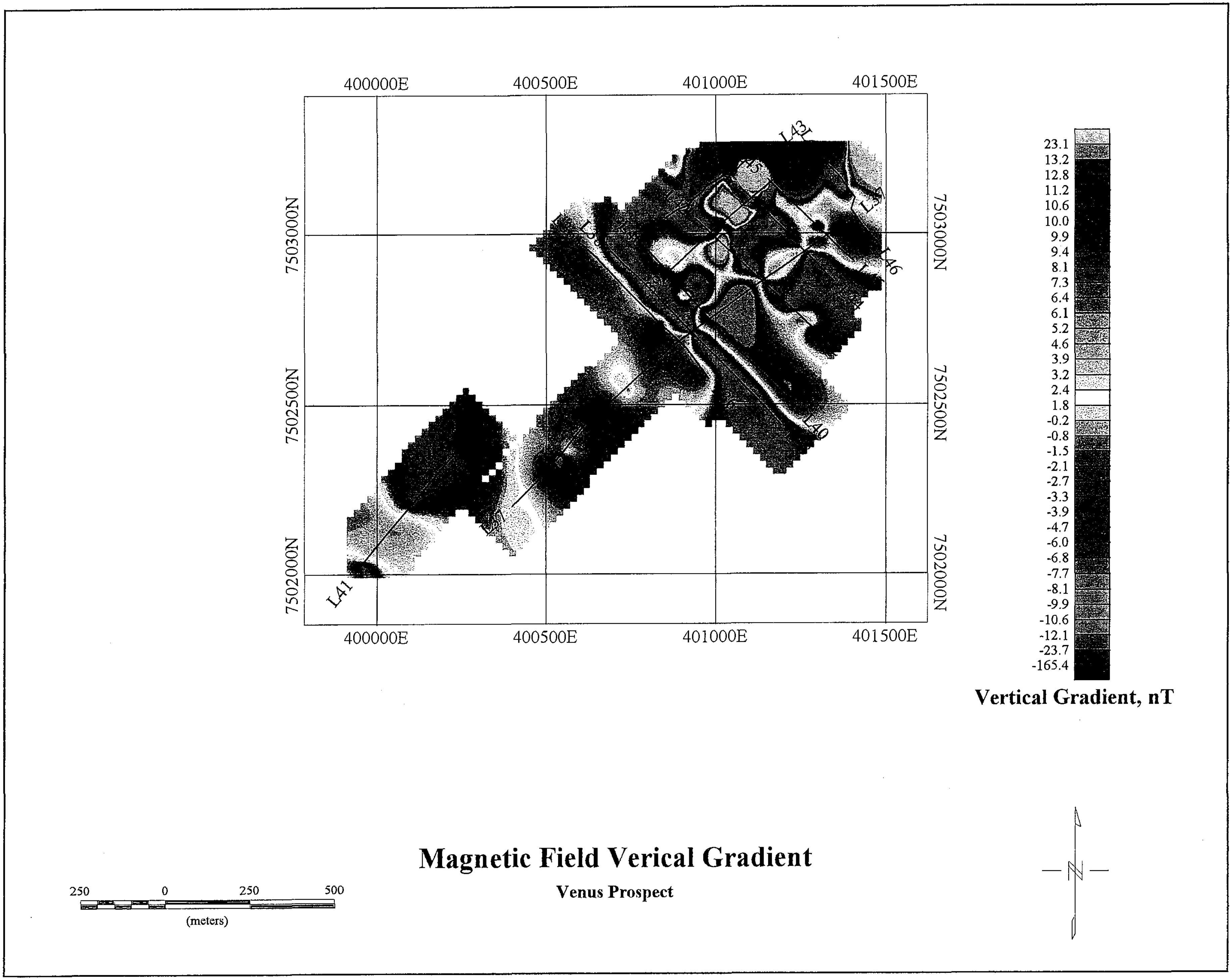

Figure 21 Venus Prospect vertical magnetic gradient. Coordinates are in UTM zone 5.

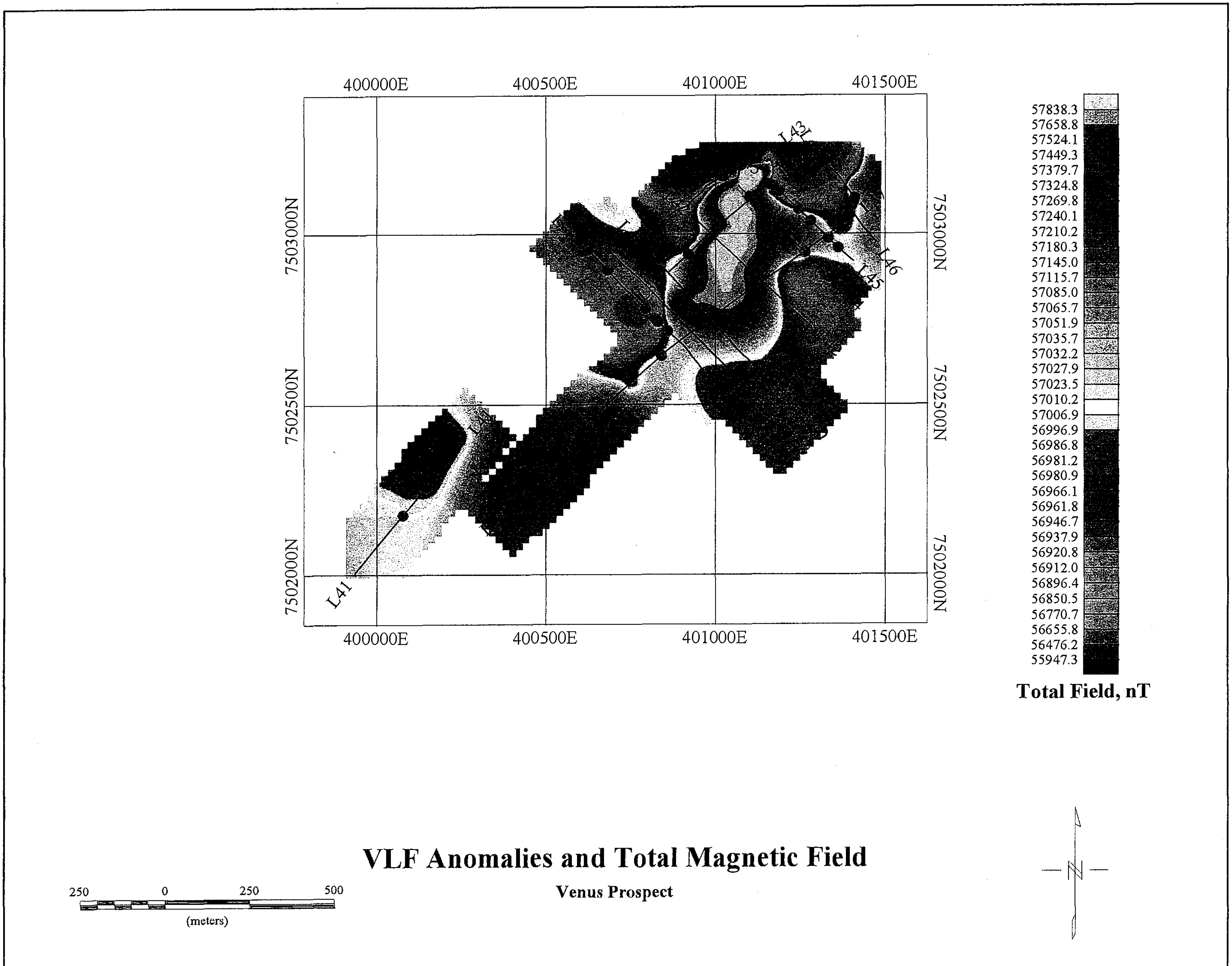

Figure 22 Venus Prospect interpreted VLF anomalies. Coordinates are in UTM zone 5.

Nolan Creek Basin
This site consists of several profiles along Nolan Creek, Fay Creek, and Montana Gulch, as shown in figure 23 (Fairbanks meridian, township 31N, range 12W). The geology consists of Devonian metasediments that have been subjected to several faulting episodes and glacial scouring. The area has been placer mined for gold since 1901 and along with the Hammond River to the north has been the most productive area in the Brooks range. Access was via 4WD vehicle and helicopter. The objective of this survey was to identify any distinguishing features in a large conductive anomaly as seen in the airborne data.

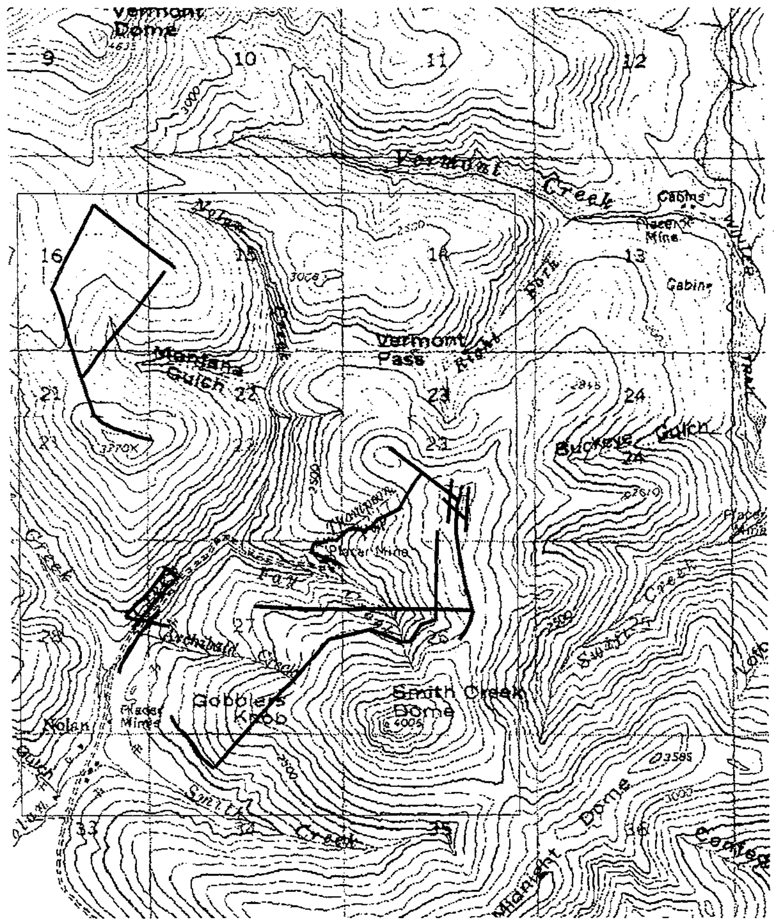

Figure 23 Location of profiles at Nolan Creek Basin.

Figures 24, 25, and 26 show the gridded total magnetic field, gridded magnetic gradient, and plot of VLF anomalies. The data are presented without much interpretation as the coverage is incomplete, making it difficult to adequately interpolate where there is no coverage. The magnetic highs and conductive anomalies present in the southwest portion of the survey may be the result of cultural influences, as there has been significant mining along Nolan Creek

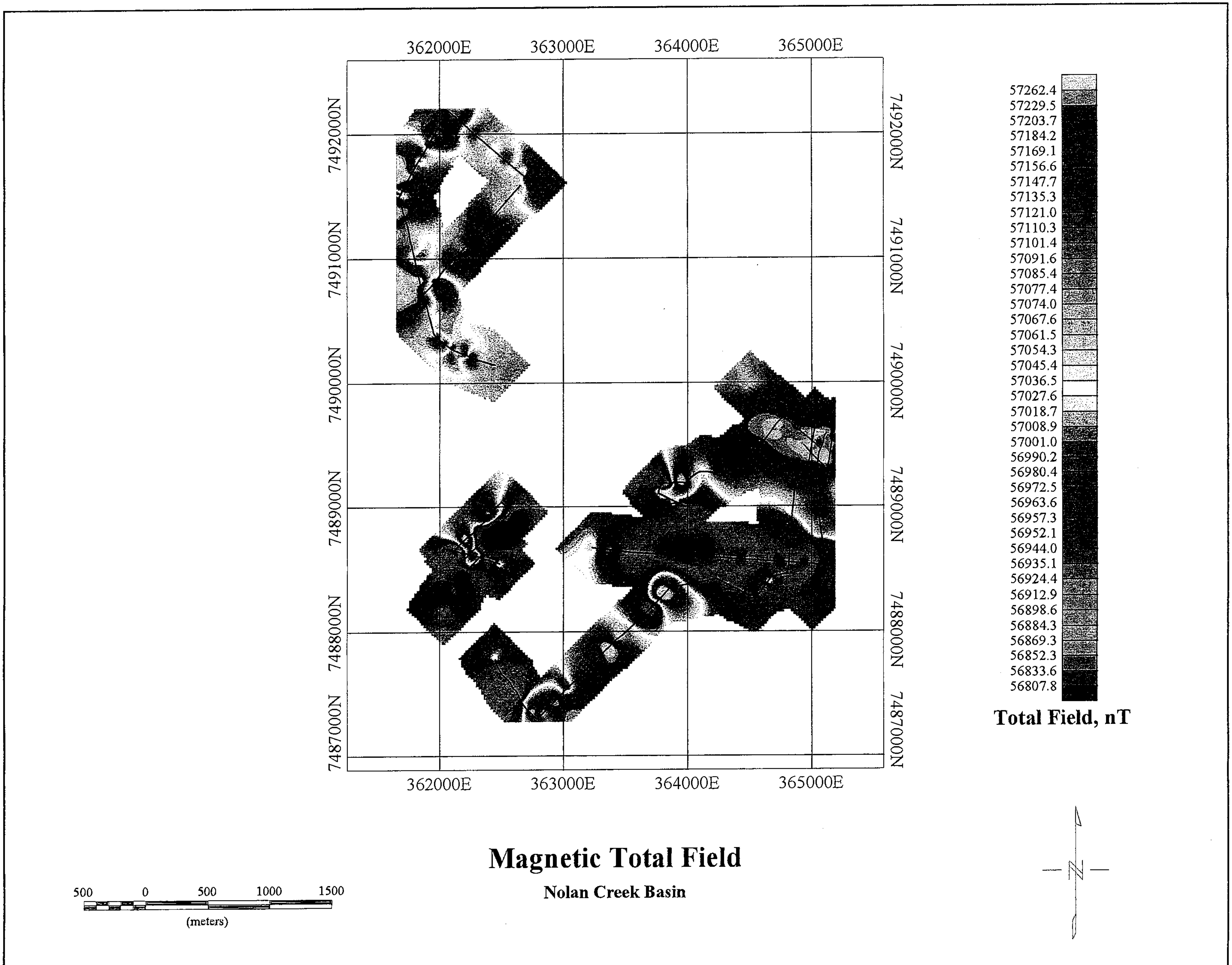

Figure 24 Nolan Creek Basin total magnetic field. Coordinates are in UTM zone 5.

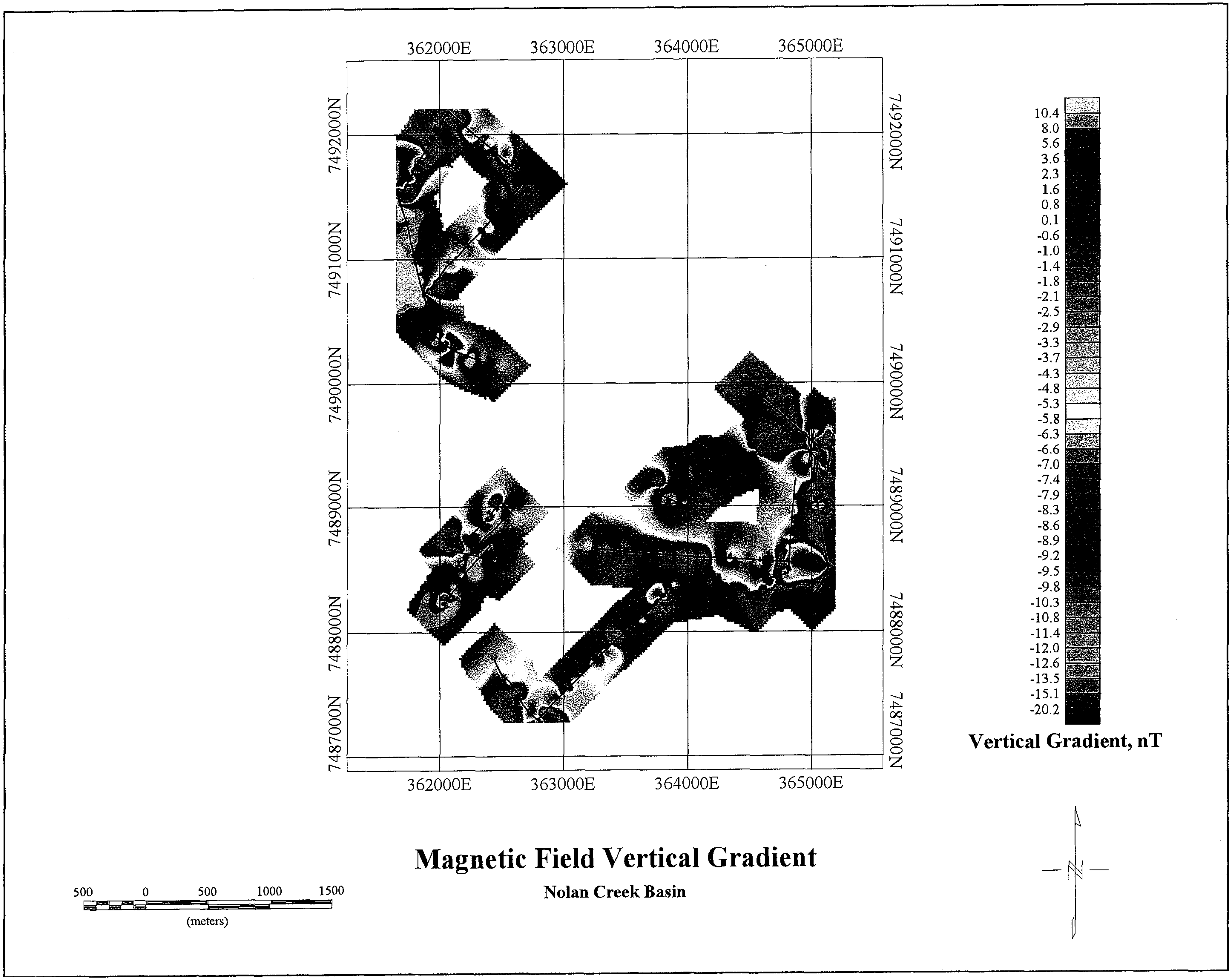

Figure 25 Nolan Creek Basin vertical magnetic gradient. Coordinates are in UTM zone 5.

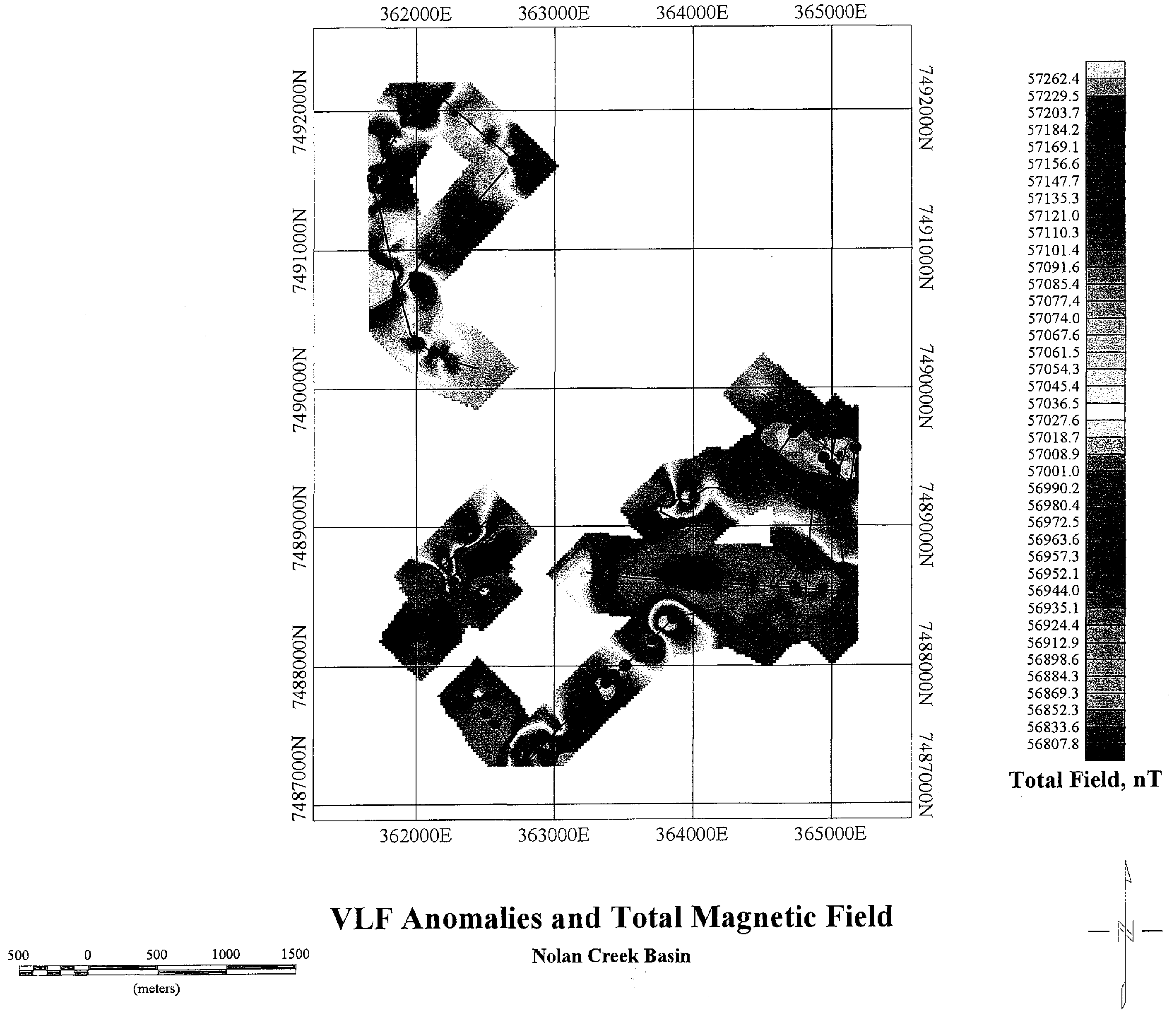

Figure 26 Nolan Creek Basin interpreted VLF anomalies. Coordinates are in UTM zone 5.

CONCLUSIONS

Ground based magnetic surveys identified and delineated magnetic anomalies at two locations: Linda Creek Pass and Venus Prospect. Coupled with additional information such as geologic mapping and geochemical sampling, the delineation of possible mineralized zones can narrow the focus of further exploration efforts. The possibility of additional skarn deposits at Venus Prospect could be estimated by conducting additional magnetic measurements with a denser line spacing, or through drilling. The Linda Pass anomaly could be better defined through soil sampling or additional geophysical methods such as induced polarization (IP) or controlled source audio-magneto telluric (CSAMT) to detect sulfides. Ground-based measurements have correlated with airborne data. In larger areas such as the Nolan Creek basin there is simply too much land to cover, making it difficult to provide detailed geophysical maps. The further complication of rugged topography practically rules out ground-based geophysics for geologic mapping. When a suspected target is identified, a detailed grid can be performed in a short amount of time.

Ground penetrating radar can successfully identify depth to bedrock in placer gravels under ideal conditions. The practical depth of investigation in gravels seen along the Middle Fork is approximately 20 meters (66 feet), although bedrock was only identified down to a depth of 5 meters (16 feet). The radar signal cannot penetrate any deeper. One factor limiting penetration is surface conductivity due to surface water. Further investigation in winter when the ground is frozen may yield greater depths of penetration.